

TEXTILE BULLETIN

Vol. 49

NOVEMBER 7, 1935

No. 10

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PUBLISHED EVERY THURSDAY BY CLARK PUBLISHING COMPANY, 118 WEST FOURTH STREET, CHARLOTTE, N. C. SUBSCRIPTION \$2.00 PER YEAR IN ADVANCE. ENTERED AS SECOND CLASS MAIL MATTER MARCH 2, 1911, AT POSTOFFICE, CHARLOTTE, N. C., UNDER ACT OF CONGRESS MARCH 3, 1897.

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Sloan Speaks of "Tomorrow's Business"

SELF-REGULATION by industry—if regulatory legislation is needed at all—with industry proposing the rules subject to government veto, offers the best hope for "tomorrow's business," according to George A. Sloan, former president of the Cotton-Textile Institute, in an address Monday before the annual meeting of the American Bakers Association.

Although he did not refer specifically to the current efforts of the skeletonized NRA to develop the basis for new industrial regulatory legislation, Mr. Sloan obviously had them in mind when he suggested:

INDUSTRIAL SELF-REGULATION

"Perhaps some day the law will develop so that when an enlightened majority of an industry recommends a prescribed method of operation or course of conduct, as in the best interests of the industry, its employees and the public, the government may prevent any departure from such course as an unfair trade practice, just as today the Federal Trade Commission may issue a cease and desist order against the recognized unfair trade practice of misleading advertising. I am convinced that in any future legislation for industrial regulation, industry should be given the power to initiate proposals and the government's power should be limited to that of veto. Thus neither government nor industry is absolute. Each must respect the other. True partnership rests on such an equality of operation and, in the final analysis, the success of any such legislation must rest on the sincere co-operation of industry."

Reviewing the cotton textile industry's experience under its code, Mr. Sloan recalled the increasing tendency, in the latter days of NRA, "to impose changes by executive order and less inclination on the part of the Administration to listen to the recommendations of industry," until, he continued, "instead of the industrial self-regulation which we had envisioned, we found ourselves floundering in a bog of bureaucracy." He emphasized that the cotton industry had resisted successfully the attempts of the government to modify the code by arbitrary imposition and of agitators to amend it by strike—in the latter case when, he said, "a few strong words from the Administration at that time as to the right to work and as to the fundamental impropriety of attempting to amend a Federal code by strike, would have prevented much hardship and suffering."

"And," he warned, "the cotton textile industry will take the same stand against any proposal to set up a governmental agency with arbitrary power to impose regulations upon industry. While we continue to stand ready to contribute our full part in any national emer-

gency, this is not to be interpreted as an indication of the slightest willingness to submit to regimentation."

FEDERAL TAX PROGRAM

Emphasizing that "the processing taxes are only one form of an increasing number of so-called invisible taxes which, as the President has recently stated, fall relatively much more heavily on the poor man than on the rich man," Mr. Sloan appealed for "a scientific rather than a haphazard and a political approach to the tax problem," adding:

"What is needed most in this country is not additional taxation but more incomes to tax. This can best be accomplished through stimulating business recovery now well under way by removal of the threat of further experimental legislation and through restoring confidence by preparation of definite plans for balancing the Federal budget at some fixed date. . . ."

"The unbalanced budget, the great increase in the national debt, the tinkering with the dollar, all carrying a threat of ultimate currency inflation, not only make for business uncertainty but are vitally affecting the habits of the American people by discouraging thrift. . . ."

DANGERS OF INCREASING CENTRALIZATION OF POWER

Concluding his address, Mr. Sloan warned that the issue transcending all other current problems is "the preservation of the framework of constitutional government."

"The dangers in too great a centralization of power in a national government," Mr. Sloan said, "are becoming increasingly apparent both abroad and at home."

"And such centralization in the Federal Government should not be attempted by indirection through the expansion of the commission form of government, or through extravagant use of the Federal taxing and 'spending power.'"

"Moreover, it is of first importance that the prestige and authority of our courts be upheld at all times. Our courts are not idly called the bulwarks of Anglo-Saxon and American liberty. Recent so-called progressive attacks on the Supreme Court are in reality reactionary and heading us back to the political structure of the Middle Ages."

"Finally, we should not lose sight of the fact that change is not necessarily progress. While we have progressed from the 'horse and buggy' days to the days of motors and airplanes, we should remember that the American people responsible for that progress, who drove the horse and buggy, were stout fellows—were men and women who knew well the value of, fought for and treasured, economic and political liberty. The success of tomorrow's business will depend largely upon whether we, their successors, have inherited their vigor and courage to insure the preservation of these ideals."

Textile Tests and How to Make Them

Discussion at Meeting of Eastern Carolina Division S. T. A.

TEST methods in the cotton mills was the subject discussed at the meeting of the Eastern Carolina Division, Southern Textile Association, at the Erwin Cotton Mills Auditorium, West Durham, N. C., on November 2nd.

Approximately 150 men were present and the discussion was very interesting. P. B. Parks, chairman, presided, and the discussion was led by D. F. Lanier, superintendent of Oxford Cotton Mills, Oxford, N. C.

The Division was welcomed by P. B. Parks, Sr., manager of the Erwin Mills, West Durham.

In opening the meeting proper, Chairman Parks explained that tests in various departments, how to make them and who to put in charge of them, rather than the results attained would be considered in the discussion. He then turned the meeting over to Mr. Lanier.

Tests in Opening and Picking Rooms

Mr. Lanier: Our first subject is tests in opening and picking, what kind of tests we should have and how to make them. Mr. Oldham, I believe you were asked to say something about that. What do you think is the best method for making tests in opening room equipment?

A. L. Oldham, Carder, Mill No. 2, The Erwin Cotton Mills Co., Erwin: I have made some tests in the last several years. First, in order to make a test you should have at least ten bales of cotton; a larger quantity is preferable. Weigh each bale before opening it, so that you will have the actual gross weight, and then weigh the bagging and ties and subtract that from the other. You will then have the net weight of the cotton for your test. With a drop light or flash light look at the machine you are going to run it through and see that every particle of waste is removed from that machine. You should have a list made of all machines that the test will be run on, giving the speeds and the settings of each, with the grade of cotton being used. After this is done, go ahead and run your cotton. When you start the cotton through, somebody should be left in charge to see that the test is run absolutely correctly from start to finish. When it is done, weigh the waste from each unit, and you will then have the figures from which to obtain the percentage of waste on the net cotton opened. That is what you are interested in finding out. Make a detailed record of the test, so that you will have it for reference at any future time; it will be of value to you.

There should be several tests made to determine how to get the most efficient work from your opening room equipment by running at different speeds and with different settings. It will take several to find what you are getting out of your opening room machinery. After all these tests are recorded, you will have a comparison to judge from as to the best speeds and settings for your kind of equipment.

Mr. Lanier: Have you tried shifting your machines around and changing them?

Mr. Oldham: I have run one vertical opener, one bale breaker and one horizontal cleaner. I have tried shifting these things from first one place to another in the line of cleaning. Personally, my recommendation along that line is that I would not use one vertical opener before I had run the cotton through some other machine. In other words, I do not like three vertical openers, or even two,

right along, because the type of this machine has some tendency to curl the cotton. If you will test that, you will see that the more vertical openers you run, the more you curl your cotton. There are some speeds at which you can run them so they will not curl the cotton. If you run a vertical opener very slow, and the cotton stays in longer, it will curl. I find that a speed higher than the manufacturers recommend is best.

Chairman Parks: Whom do you get to make your tests?

Mr. Oldham: Always have somebody in the room to make it. This man does not do anything else. The opening room man can not make the test; he has something else to do. To get a test made accurately you have to have someone stay there. I should like to impress upon you the importance of making tests accurately. A test not accurately made is worse than no test at all, because the figures will be misleading. Any test costs money to make, and unless they are correct money is wasted in making them.

Mr. Parks, Sr.: Do you find it necessary to line the floor with paper, under your machines, so as to catch all the sand, etc.?

Mr. Oldham: Yes, sir. I forgot to bring that point out. First, use a flash light or a drop light on a cord to see that all the waste under these is cleaned out.

As I said, the thing I want to impress upon you is that tests should be made very, very accurately in order for you to depend upon them. If they are not so made, you can not depend upon them.

Mr. Lanier: Mr. Gilliam, of Franklinton, will you give us the benefit of your experience with tests in the card room?

George Gilliam, Supt., Sterling Cotton Mills, Inc., Franklinton: We really have not had time to do much about testing. About the only test we have made recently is the yard-for-yard lap weight. We have one-process picking. We take the whole lap and cut it up into yard lengths and weigh it. We have made the waste test, but not recently. We just have not had the time, because we have recently started up after standing for six months.

Mr. Lanier: How do you measure those yards of lap? Do you have a way to do it to keep any stretch out?

Mr. Gilliam: We have a yard-length frame, and we put it down on that and clip it with a pair of scissors. We have cut a yard in four parts and weighed that, just to get a cross section.

Mr. Lanier: Who makes that test, Mr. Gilliam?

Mr. Gilliam: It is under the supervision of the foreman and second hand. It costs money to make these tests, and we have to use our own foreman and second hand to do it. I did not have a special man.

Chairman: Have you ever held up a lap to the light and looked for thick places and thin places?

Mr. Lanier: I have been at that for a number of years.

Has any other gentleman here made any tests in his opening and picking room that would be of interest to this meeting?

W. H. Miley, Jr., Supt., No. 2 Mill, The Erwin Cotton Mills Co., Erwin: There is one thing in connection with the tests in the opening and picker room that I have done that I think would be of interest, and that is a waste test.

Those who have a Willow machine can take the waste and run it through the Willow machine and separate the fiber from the heavy waste and get the character of the waste. After cleaning that Willow machine thoroughly, getting it absolutely free of all dirt and waste, if you run your waste through it, thus separating the heavy waste from the fiber, it will give you a pretty good idea of the character of the waste you are getting out.

Mr. Lanier: We have always been bothered about the evenness of laps, and if any of you gentlemen have been able to do anything in the last few months to get an more even lap, please get up and tell us about it. We have made a lot of progress in picker room machinery, but we still have some unevenness in laps—some of us do.

W. V. Byers, Asst. Mgr., Erwin Cotton Mills Co., Durham: I think the best way to get evenness of lap in the picker room is to have a system to control the amount of cotton in your hoppers. I think that is the most important thing you can have, and I think most mills have realized its importance and have gone to trouble and expense to install a system by which they can control the exact amount of cotton in each hopper. I have had the experience that if I let my hopper run down to half-full I would not have the same weight of lap as if it is kept at full. I think it is very important, in making a test, to see that the cotton is kept at the same height in the hopper, and I certainly urge the importance of installing some electrical or mechanical equipment to do that.

M. R. Harden, Supt., Erwin Cotton Mills Co., West Durham: I think that proper attention to fans, etc., is very important in securing evenness of laps. But we are getting a little away from our subject. In making tests, however, we should see to those things, see that the screens are set right and take the cotton evenly, that the cotton is at the right height, etc.

Mr. Lanier: Has anyone present had experience in making tests with different types of beaters, and what effect do they have on the stock?

Chairman: I am not going to answer that directly, because our subject does not call for us to go into the results but only into how to make the tests. It seems to me the proper method, both to test the type of beater and the setting of the beater (which, of course, takes in two things, the setting between the feed roll and the beater itself, which affects the breaking strength very largely, and the setting to the grid bars, which affects the waste) is to test the breaking strength of the yarn. We know that the Kirschner type of beater, the one with teeth on it, has a different effect on the cotton from the one with the blade. I should think the proper method to test those two for breaking strength (which is, after all, what we want; we want strength and cleanness) would be to run a number of pounds of cotton through a machine equipped with Kirschner beaters and a like number of pounds through a machine equipped with blade beaters, letting the product of the two machines go through exactly the same processes after that—go through all the same processes in carding and go through the spinning. There is the place that you can get your breaking strength test and get it accurately. If you made those tests, and the yarn from one of the beaters had a better breaking strength, I think you would be of the opinion that that beater is the better, and so would I.

Mr. Harden: That partially answers the question. Would you set the blades in the machine and run through a certain amount of cotton, then take out the blades and put in teeth and run a like amount of cotton through? Also, how would you set your beaters?

W. T. Byrd, Carder, No. 1 Mill, Erwin Cotton Mills Co., West Durham: I have just swapped the beaters, to

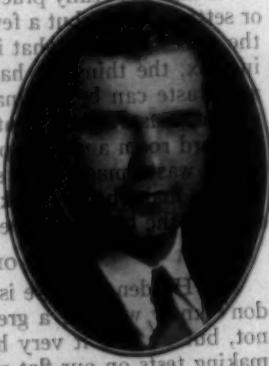
see if there was any difference in running the test. That is the only way we have. In other words, I put a blade beater in, then put a Kirschner beater in. I used to run them on the same machine; didn't think there would be very much difference. If you run ten bales of cotton, that ten bales may be from a certain locality; then you may get ten more bales which may be from somewhere else or may be of a different grade or may be trashy. Unless you examine that cotton and compare the different bales that you are going to run together, I say you might run it today, and it would be a fair day, and tomorrow you may run the other test, and it would be cloudy and damp, and you would not get the same test from your machines. Therefore, I think all that ought to be taken into consideration when you are running a test. The temperature, the humidity, where the cotton came from, the staple of the cotton, etc., all have to be taken into consideration in running a test in the opening room.

Mr. Parks, Sr.: I believe there is one thing that is important, and that is to have every machine in our opening room set just alike in their position and that they have the same tensions, etc. I believe, if we are going to test cotton through certain machines, we ought to set aside ten bales or twenty bales, all from the same lot, put it through the picker, set the beaters, make the test, run that cotton through the same line of cards, the same slubbers and intermediates and fine frames, if you have those things, noting at the time the relative humidity, etc., that you have in your room. If you do those things I think you will get more intelligent results than if you run it through a Kirschner beater on one machine and a blade beater on another machine.

David Clark, Editor, *Textile Bulletin*, Charlotte: A question was raised a while ago about the setting of those beaters, and I think that ought to be answered. I think it would be absolutely wrong, in making a test with a Kirschner beater, to set it as far off as the blade beater. The Kirschner beater ought to be set just as close as it can go by without touching it. That takes cotton off in little bits, where the blade beater takes it off in lumps.

Mr. Lanier: How many agree with Mr. Clark on that? Raise your hands. Several. I agree with you, Mr. Clark. I tried setting it close and got better results!

T. W. Mullen, Supt., Rosemary Mill Co., Roanoke Rapids: In sitting here and listening to this discussion of tests, I feel that I have hardly ever made a test that was conclusive. The way I feel about it is that the only way to make a test is to have a technically trained man, a man who knows about those settings, a man with a textile school education and then some practical work. Have him make those tests and have him carry them long enough to get something conclusive.



T. W. MULLEN, Supt., Rosemary Mill Co., Roanoke Rapids. M. R. HARDEN, Supt., Erwin Cotton Mills Co., West Durham.

I am not up here to advertise the Arkwrights, but the only really conclusive test I know of in my mill was made for the Arkwrights; it was made on the breaking strength of yarn dyed with vat dyes. We had a man on that for two or three weeks, and I believe that test actually proved something. The majority of the tests that we make in the mill, by letting the foreman try to make them, are not worth much. We attend these meetings and hear men say they have made tests, but they are giving their opinion and haven't anything much to back them up.

As to the Arkwrights, this last summer at Myrtle Beach we tried to revivify the Arkwrights. That organization has been somewhat inactive during the depression. We are glad to have anybody try to make tests to qualify for the Arkwrights. If he will see Mr. Hill, the secretary of the Association, he will take their names. If they wish, they can have tests assigned to them, or if they have some special test they want made we are glad to have them do so and to admit them to the Arkwrights. The tests made under the supervision of the Arkwrights I believe have proven something and have been conclusive tests. I know some other tests have not.

We have a young man in our organization now who is a graduate of the University of North Carolina and also of the Textile School. I am thinking of taking him and letting him make some tests. Unless you have a well educated and thoroughly trained man and give him all the time and help he needs, I don't think you will get anything conclusive.

Chairman: Just as a clincher to that discussion on opening and picking, I should like to say that I think when you make a test you ought to record it right then. What good is a test to you eight or ten years from now if you don't record it? By that time you will have forgotten it. If you want to get the value of your test, and it is a good one, it ought to be recorded and kept. I had that thing pop up in my organization a few weeks ago, and I was able to look back in my book, fortunately, and see exactly what percentage of waste we were getting on what cotton by certain processes on a certain day. That is worth a whole lot.

TESTS IN CARD ROOM

Mr. Lanier: Gentlemen, we are going to move on from the opening and picking to the carding. I know all you carders came here with something on your minds, and I want to get up and talk. Why make tests on carding, and how should we make them? We have them in order to improve ourselves in our handling of the product we are dealing with. I shall ask Mr. Brietz to start us off on this. He is one of the practical fellows; he has been carding for a long time.

Geo. F. Brietz, Supt., Selma Cotton Mill, Selma: I have been sitting here listening and learning. I have never had any really practical experience in grinding cards or settings cards, but a few days ago I got this idea. With the price of cotton what it is today, and with the processing tax, the thing we have to look out for is waste. If any waste can be eliminated, or if there is less waste, it will help us. I just want to say that the waste today in the card room and the opening room is about 85 per cent of all waste made. To study how to lessen that waste, how to make better work, and keep records of all we are doing is the best thing we can do.

TESTS ON FLAT WASTE

Mr. Harden: There is one thing that we are doing; I don't know whether a great many people are doing it or not, but we find it very helpful in our carding. That is making tests on our flat waste. Of course, a great many people weigh the number of grains per flat right often,

and we feel that is necessary. When we get our waste out at the end of the week we are very careful, and on Monday morning we weigh the fly waste and then weigh the waste from two or three flats on the card. The man making the test can go around and take the strippings from the flats and record those. Then when a card gets out we know what to do about it.

Mr. Lanier: Who does that?

Mr. Harden: The overseer does that, with the help of the card hands. They go with them, but he keeps the record. The assistant overseer takes his place while he is out.

Mr. Lanier: I think that is a fine suggestion. That is a test that could be worth a great deal to us, and it will not take a great deal of time. All of us can do it.

Mr. Brietz: Just last week, making some tests of that kind, weighing the grains from the different flats, we found a variation of as much as 6 grains in 20 grains. We were also weighing the sliver and found a variation there. I should like to know how to eliminate that.

It is not a bad idea to have the coiler bonnets lifted and get the dirt out from under there. On the drawing frame all the plummets ought to be looked after every now and then. Once a week it is a good thing to have the bonnets of the machine lifted, so everybody can see if there is any waste in there, especially the coiler bonnets. Also look after the short studs.

Mr. Lanier: Have any of you made any tests on the speed and the setting of your cards? Have you made any tests on that?

TESTS ON CARD WASTE

Mr. Parks, Jr.: Just to get the ball rolling, I will say that it is possible to change the lick-in speed and change the waste a whole lot on the card and also possible to change the speeds on the opening room machinery and picking room machinery so that all the results will not show in the opening room but will show up in the cards. So waste tests on the cards are very necessary. Say you want to throw out some fly on the vertical opener. You get less waste, have less fly, and think you are saving money when you weigh it up. But you should follow it all the way through; to have an intelligent answer to the question of whether you are really saving money you have to make a test on all of the cleaning machinery, which includes the cards. So those speeds affect it a whole lot. If you increase the speed on your lick-in, I am sure you will have more fly for the same setting on the screens. But how much nobody knows; you have to make a test to find out. If you want more fly you can get it; if you want less you can get it by fooling with the speeds. To handle the test end of it we would have to make a waste test of running so much cotton through and getting the percentage. One thing I think all the superintendents have; you have your figures, have your percentage for each pound, that you put on your report each week-end. I wonder sometimes if we know why we are doing that. You can look back at that in six months from now and see what you did with the speed you did have or with the cotton you did have. You may find you are shoveling dollars away faster than you thought.

Mr. Moore: As Mr. Parks just indicated, the character of the cotton you are running has a great deal to do with the results. It is a fine thing for us to make those tests of front and back, as well as the feed plates, to see which fits the character of cotton you have. What fits at our place may not fit yours. We have to know for ourselves what is going to work well.

PROFIT BY MISTAKES

Mr. Harden: Some of us fellows have learned a whole lot from experience in making tests, and I feel sometimes

that if we tell others the mistakes we have made it will help them. I made, I think, one of the greatest mistakes I have ever made since I have been in the mill just on what Mr. Parks was saying then. We were running some very light shades, I think 40s yarn, warp and filling, and we were told we had to get it just as clean as possible. We had the lick-in speed set up just right, and we thought we did a swell job of cleaning it, but when we got it down to the weave room we could not weave it. It was a lucky thing we had made only one warp. We could not weave it because we had destroyed the breaking strength. That ought to be taken into consideration, so that we get not only the cleaning that is required but get our breaking strength, which is important to us.

Mr. Lanier: I am glad Mr. Harden brought that out. It is fine to take out that waste and get good, clean stuff, but you can not take it out at the expense of breaking strength. That must be maintained.

Mr. Cates, can you add anything on this?

J. W. Cates, Supt., Edenton Cotton Mills, Edenton: The only thing I did was to test laps, and I got up here too late to say anything about it. I was wondering why you had a meeting today and was never more surprised than when I came up here and found such a crowd present. It shows that all the enthusiasm in the mill business is not dead yet. I did make a test of 100 laps, weighed the laps, split the laps three ways. The lap should weigh $14\frac{1}{2}$ ounces to the yard. Out of 100 laps, the high was 14.90 and the low was 14.10. That gave me a variation of .80 ounce to the yard on 100 laps.

Mr. Brietz asked about the card sliver a while ago. I have never been able to get less than from 3 to 4 grains variation per yard from card sliver. That is with the old settings on 15/16-inch cotton. I would not consider that to be very good, but that is about the usual run. But in roving you can get almost any kind of variation; it depends on the kind of cotton you are running and on the draft.

Tests On Drawing and Roving

Mr. Lanier: We come now to the drawing and roving. I believe that subject was assigned to Mr. Cates.

Mr. Cates: On the drawing frames we have not put in the modern system of drawing like the new drawing today, which is run with one set of rollers or one set of laps from your ribbon lap machine, or roll lap machine and cleaned up and weighed for each lap run out. We use the old method of creeling. I think the draft, of course, has something to do with the variations. We find on our weighings on a 58-grain sliver about a 2-grain variation on a test on the finished drawing frame.

Mr. Lanier: Have you had any tests made on your roving recently, Mr. Cates?

No, sir. We run one size hank roving; we make 4.5 hank roving and spin 24s and 26s. We find about a 10 per cent variation in that roving.

I did not know this subject was assigned to me; I am just not prepared to give anything definite along that line this morning.

ROVING TESTING MACHINE

Mr. Harden: We made pretty extensive tests of fly on roving. Frankly, we have depended almost entirely on our (Belger) tester for our results, with few exceptions. The way we carry that out is to start off with the slubber, make a test on our slubber roving. If we find it is not exactly right there, we keep working on that, on one spindle, until we get it right. We don't jump about on the frame, even, but test on one back and one front spindle. When we get that exactly right we mark those bobbins, bring it up to the intermediate, and continue on

to the fine frames in the same way. If we find we are off on the intermediate, for example, we go back to the slubber again. We feel by doing that we get about the most accurate tests we can get. We keep a record of everything.

Mr. Brietz: Where do you have the most variation, on the front or back spindle?

Mr. Harden: I think we do have a little more variation on the back spindle. I don't know why, unless perhaps it is because of the short distance.

Mr. Parks, Sr.: It used to be, when I started in the mill, that we would pick up the roving and would pull off an end here and another there, look at it for the twist, then go around to the machines and see how the ends wiggled off. That was all we could do. But now we have an accurate testing machine; we can test for thick and thin places and other variations. With this machine we use charts. The machine can be set to wind off half the bobbin. We first test the outer layers on the bobbin, then the middle of the bobbin, and then the last on the bobbin. The chart is fixed up so it shows medium twist, soft twist, and hard twist, and it indicates if there is too much variation. If there is too much, go back to the frame and correct that. If the twist is too hard, change that; if it is too soft, we go back and correct it. Then we take this roving, if we are satisfied with it, and run it through the intermediate, and then test it likewise. If we are satisfied there, we go to the fine frame, and then make the same kind of test. If we are satisfied with the finished roving we take it to the spinning room and spin it, then take that yarn and test it. If you are fortunate enough to have a laboratory, hang the yarn up in the laboratory and let it hang for three hours.

We have found that we have gotten a very material benefit from the testing machine; we have gotten away from the rule-of-thumb or the sledge-hammer test. These charts are dated and all filled in—the draft, twist, tension, number of frame, and everything. Those are filed away and can be compared next week or next month or ten years from now.

The testing machine is fixed with weights, and all you have to do is to change those weights to test the various hank rovings.

Tests in Spinning Room

Mr. Lanier: I am sure we appreciate Mr. Parks' explanation as to this machine and how it operates. Now we must hurry on to the spinning. We have asked Mr. Harden to start us off.

VARIATION IN ROVING

Mr. Harden: I don't know how far you can see these charts, but those in the front can see them, I know. They show the variation in some roving that has been run. You see they vary as much as five or six lines in some cases. There is one roving that does not vary much from one line. The tension is also indicated on here. You can determine the amount of tension on the bobbin and can determine the amount of variation by the up and down movement, and can determine whether the lap is correct, too. If you have the wrong lay you will have this variation in the line and find our tension may be right.

As to spinning, we have found in making our tests that we have to confine most of our tests to one spindle. I should like to find out whether you think it is better to make them on one spindle or two. Do you think it is best to use two spindles, side by side, on your test, and use two rovings, or to run one spindle and, after you make the test on one roving, put the other one on there?

C. W. Howell, Asst. Supt., No. 6 Mill, Erwin Cotton
(Continued on Page 10)

RHOADS TANNATE LEATHER BELTING

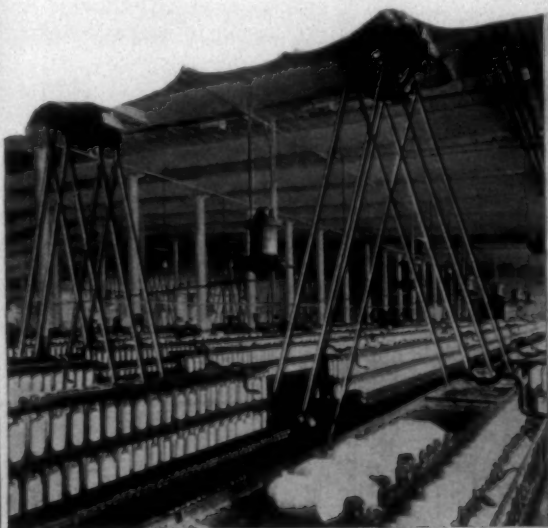
INCREASES OUTPUT IN TEXTILE MILLS

A textile company referring to a Tannate Belt purchased six years previously, said, "We would like for you to express to us at once 21 feet of the same type of belting, 6 inches wide. You will be pleased to know that this belt has proved to be the best belt we have ever used on our extractor."

In another mill, a superintendent says that Tannate Belts on cone-drives of winders have longer life than any belts he has ever used; that they never need taking-up and that production increased noticeably.

On spinning frames, a number of mills have reported additional turns of front rolls, 2 to 4 per minute, when Tannate replaced other belting. A very worthwhile increase in daily production as many buyers have proved.

It pays to use Rhoads Tannate Leather Belts. They are dependable.



J. E. RHOADS & SONS

PHILADELPHIA, 35 N. SIXTH ST.
NEW YORK, CHICAGO, ATLANTA
CLEVELAND, WILMINGTON, DEL.

Recent Developments In Textile Finishing *

By L. G. Lawrie

RECENT developments in textile finishing methods and technique are the result of the combined efforts of chemist, mechanist, and practical finisher. But this lecture is confined chiefly to the part played by the chemist, and to the chemical aspects of the subject.

It is interesting to consider briefly the evolution of the textile industry within recent times. Immediately prior to the war much textile activity was devoted to the development of the colour, design, and weave of textile materials, while finishing was largely left to take care of itself. This period was an age of dyestuff and dyeing development. Since the war much greater attention has been directed towards the improvement of finishes, finishing methods, and processes. The main reasons for this are:

(1) The trade depression necessitated the discovery of new outlets for woven fabrics.

(2) Fashion trends demanded a multitude of new materials.

(3) The advent of new textiles necessitated new methods of treatment.

(4) A change in outlook and organization of textile production to meet changed conditions. A higher degree of specialization became necessary to capture trade.

All these factors involved provision for intensive research and led to the carrying out of textile research in universities, government and trade research associations, by chemical and textile manufacturing firms. Simultaneously the increased absorption of trained chemists by the textile industry helped materially in the same direction.

In the case of finishing, investigations proceeded on two main lines:

(a) A study of finishing processes.

(b) Investigation into finishing materials and the discovery of improved alternatives or entirely new finishing assistants.

Some idea of the progress made in the latter direction may be obtained from the fact that more than one thousand different products and preparations are available for use as finishing assistants.

At the outset the urge to utilize by-products of chemical manufacture resulted in the discovery of properties of certain substances which had beneficial effects in textile finishing processes. An example of this concerns sulphite cellulose liquors. It was found that the addition of a small quantity to a dyebath protected animal fibres from the action of alkaline liquors, e.g., during dyeing with vat dyestuffs.

Later, chemists studied finishing and finishing processes with the object of providing chemicals for use as finishing assistants. An important factor in this was the development of solubilization by sulphonation.

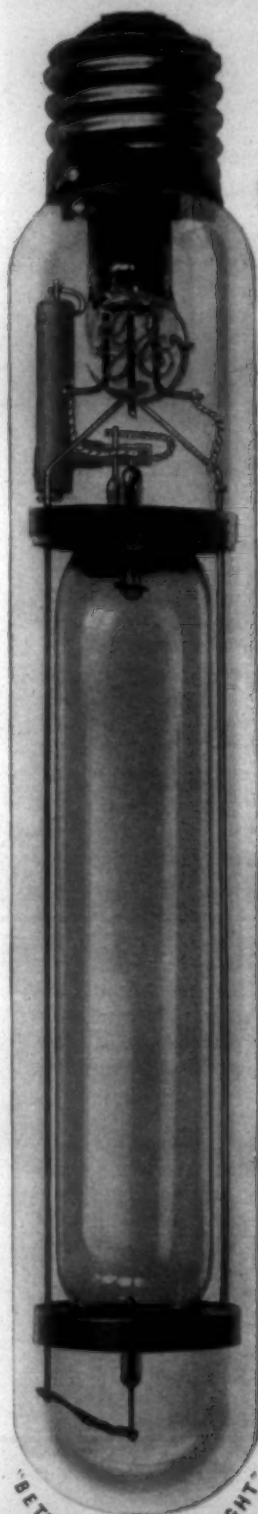
SULPHONIZATION

Sulphonation has been applied to a large number of chemical compounds, including saturated aliphatic hydrocarbons, and a few of the outstanding results are:

(a) The preparation of such compounds as the isopropyl naphthalene sulphonic acids. These were found to possess "wetting-out" properties—a property on which depends the success of many wet textile processes.

(Continued on Page 34)

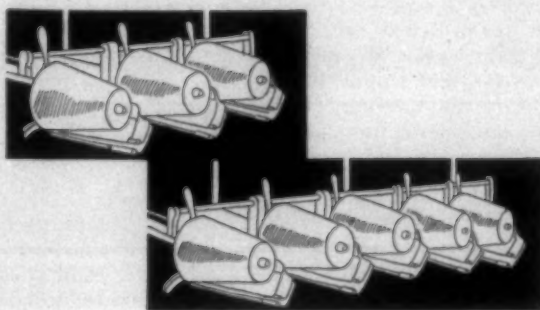
*In a lecture to the Textile Institute (Lancashire, Eng., Section), October 9, 1935.



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Speed up production by improving your lighting. Make it easier for workmen to see every individual thread. Make it possible for them to tie broken ends quicker, to save time in threading reeds, and to perform other operations where *their* time means *your* money. The General Electric High Intensity Mercury Vapor Lamp provides the quality of light that penetrates into all corners, that makes shadows luminous, and makes production truly economical.

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mination. Men can work long hours under the General Electric High Intensity Mercury Vapor Light without that costly end-of-shift let-down in efficiency due to eye-strain. Higher efficiency per man-hour means higher profits for the owner.

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HIGH INTENSITY *Mercury Vapor Lamp*

Textile Tests and How To Make Them

(Continued from Page 7)

Mills Co., Durham: I should like to say, in answer to Mr. Harden's question, that a good way to do that would be to run a number of them. For instance, for one hour run one doff on this spindle, then the next hour run it on the next one, until you have a number of them, and then get your average.

TESTS ON ROLL SETTINGS

Mr. Byers: We have made some tests on roll settings. I think it is very important to have the proper settings for different staples of cotton. In the past we have had tests made on a roll spacing machine to determine the proper settings for rolls. We do not have this machine ourselves, but we have had tests made by a very competent man for settings on different staples of cotton. I think it is very important, if you are going to have evenness, to have the roll set to fit the length of cotton you are using.

Mr. Lanier: Mr. Parks, can you tell us anything about the Reeves variable speed drive?

Mr. Parks, Jr.: Not discussing the worth of the Reeves drive, but in making the comparison, I think the best way to do that would be to run the same roving on the machine to be run with the Reeves drive and on one without. To compare them, make an end-down test. That is a very important test, and I think it is one that would be most interesting to this meeting. I thought it would be a good idea to make up a form for one. We can make it up on the blackboard and have everybody contribute to what he thinks should go into it.

TESTS FOR ENDS DOWN

An end-down test is made over a period of time to determine how many ends come down, in the first place, and, second, what caused them to come down. It is the most valuable test I think we can make in the spinning room, because it enables you to put your finger on troubles that occurred farther back than the spinning room. Say we are going to have an end-down test made in our particular mill. In the first place, who will make it? The superintendent is not so important but that he ought to make that test or have it done under his supervision, or the overseer might make it. The best man you have (maybe it is yourself) is not going to be good enough to know what caused all those ends to come down. If you can not determine the real cause, put it in the unknown column.

Mr. Faris: You asked who ought to make the test. Some disinterested, honest and capable person.

Mr. B.: Not the spinner.

Mr. Faris: He is interested.

Mr. Parks, Jr.: He has to be competent to judge, in the first place, and has to be entirely disinterested, because sometimes tests come out the way we want them to come out, I am afraid, if we are very much interested in them.

Now we have the person. What do we have to know? We have to know what hank roving we are making. How many spindles are we putting this test on? I suggest about eight sides is about as much as one person can look at at one time. The person who looks must accompany the spinner and determine what made that end come down. Don't put it up yourself, but let her do it while you go to the next one. Keep her in sight, because they just love to put up the ends before you can get to them.

Now, as to the length of time. We put that down as

spindle hours, because that is the only way we can get at it.

We must have the yarn number, of course. What else should go on this form?

Various members suggested the following: Front roll speed; grade and staple of cotton; type of drive; type of roll covering; drafts; traveler; ring size; humidity; spindle speed.

Mr. Parks, Jr.: All that before you start your test. We must have the total organization for the way that roving is made; I will not take time to put that all up there.

Now we are ready to analyze the ends down. When an end comes down in this classification, put a mark under there, if it is due to lumps in the cotton. It might be due to clearer waste; separators; singlings; top rolls; worn guide wire; flying lint; spindle out of plumb.

I am about to run out of space, but that gives an idea of what we want on there. For lack of space and lack of time, I am going to pass there printed forms around.

Mr. Harden: What do you think is more important, to run the test at the same time on two spindles, for the same length of time, or to run them on the same spindle, one after the other? I am afraid there might be some change in the weather if you run one after the other.

D. E. Long, Overseer Carding and Spinning, Oxford Cotton Mills, Oxford: Your test ought to be spread over as many hours as possible, over as long a time as possible.

In having our test made, we listed 39 different items that made ends come down. Mr. Horner made this test for us. He is present, and I will let him do the talking.

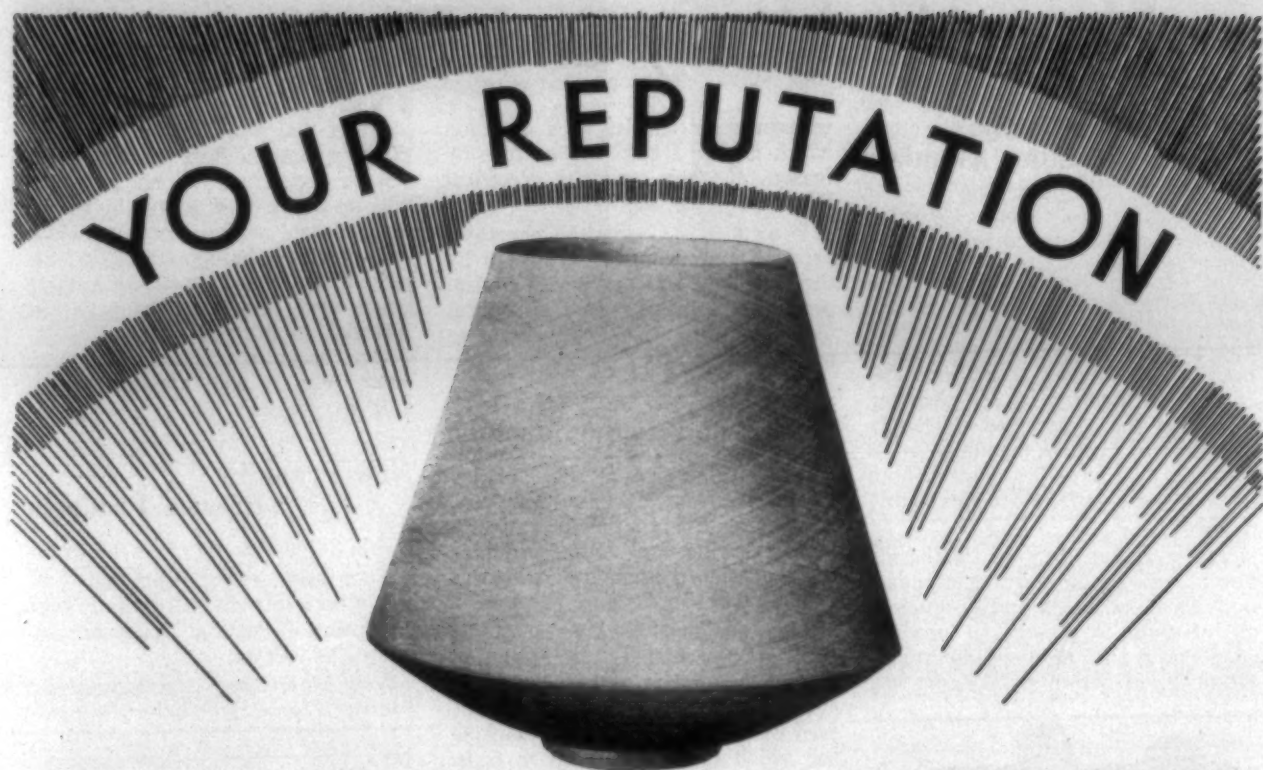
HOW TESTS WERE MADE

Edward C. Horner, Asst. Overseer, Oxford Cotton Mills, Oxford: In making this test, we started running it over eight hours and ran two hours a day for four days; then we grouped all four of them into one. While making this test I got someone to run my job for me and did not do a thing in the world but go around with the spinner and try to determine with some fair degree of accuracy what made every end come down. We not only got the total number of ends down, but we made another test along with it. When an end came down we marked that up on the creel. By marking it up that way, we could see where an end came down one or more times. If we had at least two chalk marks (and a few had three), we knew that that end needed to be worked on, so we got right in behind it and tried to find why that end came down so many times. As I said, we ran the test four different days, and we marked the charts with a different colored chalk each day. I found out, in particular, that maybe an end would not come down more than one time during a test over the two-hour period. The next day, when we ran it on the same frame, maybe it came down again. That showed us exactly which ends came down, and we could remedy it. By marking it, we could tell with some fair degree of accuracy which spindle was out of plumb, etc., and could get in there and work on it.

Mr. Horner: Before leaving the testing in the spinning room, I should like to suggest that I think a good test is the scavenger-waste test. If the scavenger waste is running higher on a particular side than we think it should, we should test it.

Mr. Parks: We are getting entirely away from the subject. There is one thing I might point out, and that is that in making these tests on a spinning frame or anything else we must take into account the human element. It is too bad to mark up against some splendid frame ends torn down by the doffer. We should mark those up

(Continued on Page 23)



CONE WINDING MAKES IT OR BREAKS IT

A reputation for quality is any spinner's biggest business asset. If YOU have such an asset, guard it well. If there is room for improvement in your case, it is none too soon to start improving NOW.

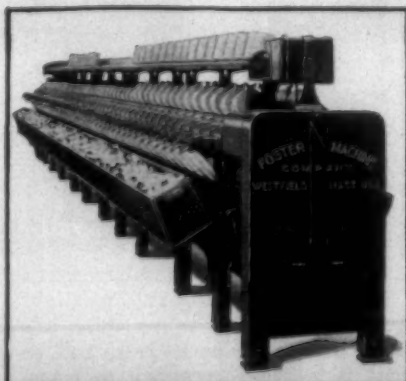
Whether your problem is to maintain or attain a reputation for quality, the Foster Model 102 Cone Winder can help you; for being the *last* process, cone winding is perhaps the most important operation in the mill.

The *appearance* of your cones determines a knitter's first impression, and first impressions, right or wrong, are lasting. The *performance* of your cones on the knitting machine is your last chance to create future business.

The Foster Model 102,

properly adjusted and properly operated, practically guarantees both proper appearance of your cones and their proper performance on the knitting machine; and this at minimum cost to you. It retains all time proven features of older Foster Models and offers important improvements, such as

100 per cent increase in production, more delicate manipulation of the yarn, additional slub catching and exact lay of the coils on the cone surface to reduce variation in tension at the knitting machine. In short, it makes Foster Cones, more than ever before, "*Standard for the Knitting Trade.*"



**FOSTER
MODEL 102**

**FOSTER MACHINE CO.
WESTFIELD, MASS.**

Standard for the Knitting Trade

New Machinery and Equipment

New Automatically Self-Cleaning Atomizer

American Moistening Company has developed a new atomizer designated as AMCO No. 4.

In stressing the advantages of this nozzle, the company says that quality and quantity of spray are maintained even under adverse conditions because this atomizer is self-cleaning. Whenever the compressed air supply is shut off, whether manually or in response to a humidity control, both air and water nozzles are thoroughly cleaned.

There is no drip or feathering down, because, on starting, atomization does not begin until sufficient air pressure is present to produce good spray, and, on stopping, atomization ceases before air pressure has



fallen to a point at which good spray is impossible, the announcement says.

The nozzles are described as being surrounded by a smooth, concave, hemispherical surface protecting them from injury and preventing accumulation of lint and fly, which is swept away by rapid streamlined currents of induced air.

Working parts are made to close limits, of metals that long experience has proven durable as to erosion, mechanical wear and corrosion. All are enclosed in a rugged bronze body of simple design, easy to clean and of good appearance. The joints are metal to metal, accurately machined so that tightness is easily secured without the use of gaskets.

Waterproofing Patent

The U. S. Patent Office recently issued new patents on waterproofing of textiles (Patent No. 2015864 and 2015865). The patents were issued to A. G. Erba, Chemical Works of Zurich, Switzerland, whose affiliated house in this country is Warwick Chemical Company of West Warwick, R. I.

The patents cover a process of

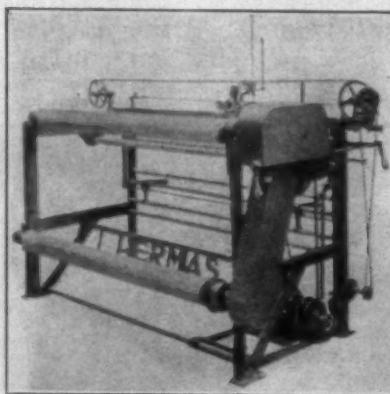
waterproofing textiles with emulsion which is discharged on the fibres by reason of their opposite electrical load.

Warwick Chemical Company's product, Impregnole, is protected by these patents and purchasers of Impregnole from Warwick Chemical Company are automatically licensees of the patents.

Sewing and Rolling Machine

The Hermas Machine Company, Hawthorne, N. J., has perfected a duplex sewing and rolling machine that is designed to handle as high as 150,000 yards of cloth in 40 hours.

This machine, known as Model DC, is constructed specifically to operate in tandem with the Hermas automatic shear; however, it can be used with any other make of machine for which cloth is put up in rolls. The machine is duplex in action and uses two separate take-up units, one of which is used as a let-off. This let-off, adjustable to loom beams of various lengths, feeds cloth into a second machine for subsequent oper-



ation. During this procedure, the other unit builds up an extra roll, so that it is never necessary to transfer rolls from one machine to another. This also means that it is unnecessary to employ a helper to assist the operator in handling rolls.

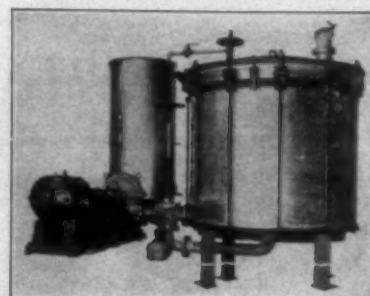
Power is from an AC or DC motor-driven, variable-speed drive, and continuous operation may be expected except for momentary stops required to sew cloth ends. Ends are joined with either a chain stitch or butt seam produced by a single-needle, power-driven, railway sewing machine. The mechanism is geared

to start and stop instantly without gripping and holding cloth. Drive can be transferred quickly from one take-up to the other simply by throwing a clutch. Other features include ball bearings throughout, adjustable tension on let-off units, adjustable guide rod, and revolving screw spreader to prevent wrinkles. The device occupies only 34 in. floor space, front to rear, and will handle a 30-in. diameter roll.

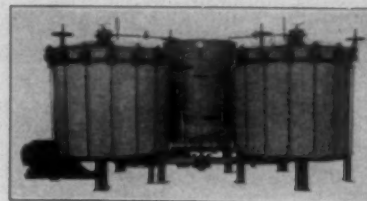
New Franklin Process Products

Four new developments have recently been introduced by the Franklin Process Company. They are described as follows:

New Fabricated Stainless Metal Package Dyeing Machine with great-



ly simplified piping arrangement. The metal can be aluminum, stainless steel, or Monel. The fabricated construction takes the place of cast construction in some of the older models. Features of this new model, aside from the fact that better matches and cleaner dyeings are possible due to the stainless metals, are that shallower pit and less floor space are required than for the older models. The simplified piping also facilitates setting up, reduces maintenance and makes possible a freer circulation.

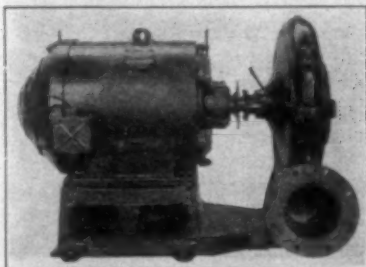


New Fabricated Stainless Metal Raw Stock Dyeing Machine. The advantages in this case are the same as for the new package dyeing ma-

chine. This new model is built with removable bottom as in the older models and the dye liquor is forced through the stock from the top down, one way only, so that the stock is not disturbed, thereby reducing waste to a minimum and improving workability.

The removable bottom feature has been added to the package dyeing machine in recent models. This feature is optional. One false bottom equipped with holders can be loaded while the other is in the dyeing machine.

New Direct Connected Motor Driven Pump for Franklin Process package dyeing, raw stock dyeing, and silk soaking machines. In this new design the motor shaft and the pump shaft are identical, the shaft being as short as possible, thereby making an important saving in floor space. The motor is of standard



construction, so that it can be readily replaced at any time. Other advantages include a saving in power and upkeep and improved circulation. The pump is of special Franklin Process construction.

Quick Opening Drain Valve for Franklin Process package dyeing, raw stock dyeing and silk soaking machines. The new valve has five major features which are stressed by the manufacturers:

The quick acting cam permits the valve to be completely opened or closed with a $\frac{3}{4}$ turn of the hand wheel.

The cam roll can be adjusted up or down in a slot by loosening lock nut C. This adjustment compensates for wear of the disc packing and permits the disc to follow down as the seat wears, or after the latter has been refaced. Thus a practically complete absence of leakage is assured at all times.

The disc (which is securely locked on the stem) is of the floating type. Note that the pressure is always on the top of this disc, when the valve is closed. These facts further facilitate a tight fit and compensate for uneven wear of the packing or seat. The disc is fitted with an ordinary packing, which will last for many

months and can be replaced at small cost.

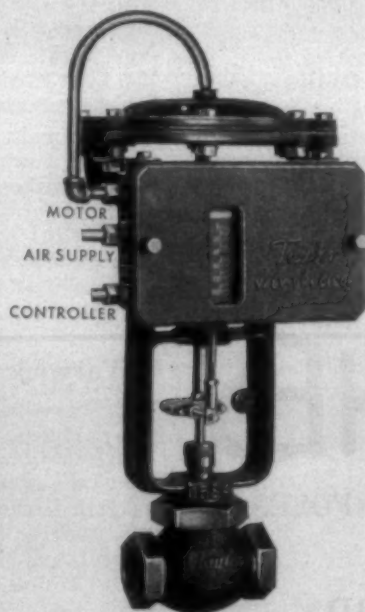
The removable seat is held in place by screw studs B. When nec-



essary, it can be quickly removed, refaced and put back in place at small cost. This operation can be repeated many times.

Taylor "Valv-Precisor"

The Taylor Instrument Companies have introduced a new precision-valve-action unit applicable to any diaphragm valve. It is designed to furnish a separate instrument for those applications where load changes are not a problem, but valve-steam



friction and diaphragm-motor hysteresis (friction and lost motion) must be overcome to obtain precision control.

The new device is designated as the "Valv-Precisor."

This device is recommended on all processes which have time lags or heat capacities demanding a low or medium controller sensitivity, provided that load changes are negligible or infrequent. It is unnecessary on processes with short time lags which permit a high controller sensitivity. It should not be used on processes involving large time lags and load changes. For such applications the Taylor "Dabl-Response" Control System is recommended.

The "Valv-Precisor" is compact (case dimensions are 8" x 5" x 2") and may be mounted on any diaphragm motor and valve. It can be used in conjunction with any air-operated controller on which a direct rigid connection can be made to the valve stem; a 25 lb. per sq. in. air or gas pressure is recommended for most efficient operation.

A non-corrosive case and cover protect the mechanism. The only necessary adjustment is to adapt the mechanism to the full travel of the valve stem. The air system is simple and essentially fool proof. An indicator which shows the actual percentage of valve opening is visible through a small glass window.

For complete details write to the Taylor Instrument Companies, Rochester, N. Y.

Centrifugal Pumping Unit

An eight-page bulletin has been issued recently by the Lawrence Pump & Engine Co., Lawrence, Mass., describing their Electropump—a compact, low cost centrifugal pumping unit for small and moderate capacities.

The Electropump is directly coupled to drip-proof, ball-bearing electric motors. The impeller is of the enclosed type and is mounted, keyed and locked on the extension of the motor shaft. The pump is for operation against heads up to 150 ft. or 65 lbs. in a single stage unit and twice the head or pressure when furnished in a two-stage unit.

The Electropump is said to be particularly fitted for circulating hot and cold water or brine, for water supply systems and booster service, low pressure boiler feeding, condensate returns, air conditioning apparatus, transfer of oil and other liquids, for swimming pools, golf courses, general service in factories, mills, office buildings, hospitals and apartments.

Personal News

Zack L. Underwood, from Minneola Manufacturing Company, Gibsonville, N. C., is now overhauling spinning at the Jackson Mills No. 3, High Shoals, N. C.

O. E. Hamer, from Hogansville, Ga., has accepted the position of overseer of spinning at the Stark Mills, Hogansville, Ga.

S. B. Laws has resigned as superintendent of the mill and mercerizing plant at the Sellers Manufacturing Company, Saxapahaw, N. C.

B. H. Baldwin, who was with Slater Manufacturing Company, has become overseer night carding, Aragon-Baldwin Mills, Rock Hill, S. C.

E. J. Powell, formerly night spinner, Slater Manufacturing Company, Slater, S. C., has become overseer day spinning, Highland Park Mill, Rock Hill, S. C.

F. M. Oxner, formerly day spinner, Slater Manufacturing Company, is now night superintendent at Conestee Mills, Conestee, S. C.

C. L. Poole, day overseer carding, Slater Manufacturing Company, Slater, S. C., has resigned that position to become superintendent of J. W. Sanders Cotton Mill, Inc., at Starksville, Miss.

F. M. Tidwell, who had been superintendent of the J. W. Sanders Cotton Mill, Inc., at Starksville, Miss., has been made general superintendent of the several mills belonging to J. W. Sanders Company.

J. T. Huneycutt, formerly of Ranlo and Wadesboro, N. C., has accepted the position of general superintendent of the mill and mercerizing plant of the Sellers Manufacturing Company, Saxapahaw, N. C.

J. E. Millis, president of the Adams-Millis Corporation, High Point, N. C., has become one of the North Carolina directors of the "Southern Committee to Uphold the Constitution."

B. S. Roy Office in Greenville

Greenville, S. C.—J. R. Roy, member of the firm of B. S. Roy & Son, of Worcester, Mass., well known manufacturers of card grinding machinery, has charge of a branch office of the company which has been opened here. He expects to spend eight months out of each year in the South.

CLINTON STARCHES

FOR ALL TEXTILE PURPOSES

Manufactured by

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CLINTON, IOWA

QUALITY

SERVICE

People Worth Knowing

A series of pictures, picked up here and there, by members of the staff of the Textile Bulletin.



Mrs. Edna Reed, overseer of spinning, and Dan Johnson, superintendent of the Ingram Manufacturing Company, Nashville, Tenn.

Mrs. Reed is the only woman overseer of spinning in the South. She has held this position for about four years, and has handled her work capably and satisfactorily. She is a native of Talladega, Ala., where she was formerly with the Samoset Mills. She began with the Ingram Manufacturing Company as timekeeper and four years ago was made overseer of spinning.

Superintendent Dan Johnson was formerly overseer of carding and spinning at Quitman, Ga., and later in charge of combers at Bibb Manufacturing Company, Columbus. He came to Ingram as overseer of carding and was promoted to superintendent six years ago.

Corn Products Employee Feted On Fiftieth Anniversary

The fiftieth anniversary of Charles Ebert's connection with the Corn Products Industry was celebrated at a dinner given in his honor at the Downtown Athletic Club, New York. In addition to the entire executive staff of the Corn Products Refining Company some 200 of his business associates and friends were present.

In the midst of a setting attractively decorated for the occasion; glowing tributes were paid to the guest of honor by the speakers for his many valuable contributions toward the development of important manufacturing processes. Gifts from the employees of several of the company's domestic offices and plants as well as congratulatory messages from many of the foreign manufacturing units were given to Mr. Ebert.

Warwick Chemical Co. Increases Sales Force

Increased business has made it necessary for Warwick Chemical Company of West Warwick, R. I., to divide the Southern territory. Whereas W. E. H. Searcy, 3rd, has been covering the entire Southern territory, he is now concentrating his efforts on Georgia, Alabama and part of South Carolina. His headquarters, as before, will be in Griffin, Ga.

Earl H. Walker, formerly with Solvay Sales Corporation, has opened headquarters in Concord, N. C., to cover part of South Carolina, North Carolina, the Virginias and Tennessee.

M. E. Garrison Completes 30-Year Term As Superintendent

M. E. Garrison has recently completed 30 years as superintendent of the Glenwood Cotton Mills, Easley, S. C. As he was overseer of carding for two years before being promoted, he has the unusual record of 32 years with the same mill.

M. E. Garrison, or Ed Garrison, as he is affectionately called by his friends, was born at Belmont, N. C., and began his cotton mill career in November, 1893, with a job in the card room of the Mt. Holly Mills, Mt. Holly, N. C., which was then operated by the late A. P. Rhyne. He was later transferred to the mill at Stanley Creek, N. C., and worked in both the carding and spinning rooms. When the late W. B. Moore moved to Greenville, S. C., in 1896 and built the Mills Mill, Ed Garrison went with him and helped erect the plant.



His first job as overseer was as night overseer of carding and spinning at the Cannon Mills No. 2, Concord, N. C.

In 1900 he went to the Poe Mills in Greenville, S. C., as overseer of No. 2 card room, but later went with the late D. R. Harriman to Union, S. C., and erected the machinery and started the Buffalo Mills.

In 1903 he went to the Glenwood Cotton Mills as overseer of carding and in 1903, just 30 years ago, was promoted to superintendent and has held that job continuously since then.

The record of M. E. Garrison as a cotton manufacturer has been one of uniform success and he has long been regarded as one of the outstanding superintendents.

He has enjoyed a reputation for character and integrity and because of his fine personality and courteous manner he has a host of friends who join us in congratulating him upon his thirtieth anniversary as superintendent.

Piedmont Section To Meet

A very interesting program has been arranged for the annual meeting of the Piedmont Section, American Association of Textile Chemists and Colorists, to be held at the Charlotte Hotel, Charlotte, on Saturday evening at 7 o'clock.

A large number of the members are to attend the Duke-Davidson game at Davidson in the afternoon.

B. B. Gossett, president of the Chadwick-Hoskins Company, and George W. Hinkle, of the Republic Steel Corporation, will be the principal banquet speakers. Mr. Gossett's subject is "The Textile Industry," and Mr. Hinkle will speak on "Stainless Steel in the Textile Mills." His remarks will be amplified by a sound film showing stainless steel manufacture.

Entertainment features include music and dancing girls.

The program will include a business session, during which new officers will be elected.

Paul Haddock, of Charlotte, is president, and will pre-

side. Chester L. Eddy, Renfro Bleachery, Travelers Rest, S. C., is vice-chairman.

Charlotte has always proved a popular meeting place for the Piedmont Section and more than two hundred and fifty members and guests are expected to attend the meeting. Mr. Haddock reports that more than usual interest is being shown in the event this week.

North Carolina Association Meeting

Much interest is being shown in the coming annual meeting of the North Carolina Cotton Manufacturers' Association, to be held at the Carolina Hotel, Pinehurst, on November 21st and 22nd.

The convention will open with a banquet on the evening of the 21st, with J. A. Long, president, as toastmaster. The feature address will be by Strickland Gillian, nationally known humorist.

On the morning of the 22nd, the convention will be addressed by James A. Emery, general counsel of the National Association of Manufacturers. He will speak on "Legislative Trends in Washington as They Affect the Textile Industry." His address will be followed by a general discussion of legislative matters.

The convention will then go into executive session for its regular business meeting.

Harvey W. Moore, of Charlotte, is first vice-president of the Association and Hunter Marshall, Jr., is secretary.

Would Help Textiles With Federal Subsidy

Hartford, Conn.—A plan to revive the textile industry through a direct Federal subsidy of six cents a pound on cotton sold by the Government to textile mills is being sponsored by Senator Augustine Lonergan (Democrat, Connecticut).

The plan revealed calls for the Government to sell cotton to manufacturers for seven cents a pound. Senator Lonergan said President Roosevelt is "interested" in the plan and that "serious consideration" is being given it.

"Many Connecticut and New England textile mills now are either having a tough time of it or are closed," the Senator said.

"They would be greatly aided, and they could put a great many persons to work, if they could purchase their cotton on a subsidy from the United States Government.

"Five million or so bales of cotton are now owned by the Federal Government through loans of 12 cents a pound to growers. Carrying charges have increased this cost to approximately 23 cents a pound.

"Now I advocated the Government gamble \$15,000,000 on this cotton by selling it to textile manufacturers at seven cents a pound. It is an innovation, a test. In other words, the Government, under the plan, will take a loss of six cents a pound on the cotton, but at the same time will have made a mighty effort to revive the declining textile industry."

OBITUARY

C. W. BAUSOM

Mt. Holly, N. C.—C. W. Baucom, aged 46, secretary and assistant treasurer of the American Yarn and Processing Company, ended his life here. Besides his connection with the mills, he has long been prominent in business and civic affairs in this section. He was a director of the Bank of Mt. Holly and president of the Lion's Club. He is survived by his wife and three children.

Rayons Found Stronger Than Cotton On Weight Basis

FABRICS of ordinary viscose process rayon, under normal conditions of use, considered on a weight for weight basis, have a greater average tensile strength than ordinary cotton or linen cloth, it was stated by George Fuller, of Cox & Fuller, consulting textile technician, in a paper read at the meeting of Rayon Subcommittee A-2 of Committee D-13 of the American Society for Testing Materials in New York.

When considered from most viewpoints it appears as if textile investigations generally are made from the wrong direction. Actually, the only important consideration should be the final finished fabric. They gray yarn, unfinished fabric and other details have their place, but so many irregularities occur that what is true at one point may not be true in the finished article.

PURPOSE AND HANDLING DISCUSSED

What is found in making general comparisons of finished and unfinished fabrics, and investigating defects which occur in processing? First, that a great many materials have not been developed well for the particular result desired, and, second, that even when so planned, handling methods may partly or largely counteract the effect. In this discussion no consideration is being given to the question of style or cost for which many other qualities may be neglected somewhat.

Let us consider some specific examples. A 92x60 unfinished synthetic yarn taffeta containing 100 denier warp and filling yarn had an average tensile strength in the warp of 30.8 pounds and in the filling of 22.2 pounds. The elongation before break in the unfinished cloth was 16.30 per cent for warp and 23.70 per cent for filling. The same cloth finished had a warp strength of 20.2 pounds and a filling strength of 12.9 pounds. It had an elongation before break on the finished fabric of 7.30 per cent for warp and 9.40 per cent for filling. This particular cloth is going into distribution at present and no one has criticised the results because they do not know the condition exists. Can anyone feel that the consumer will receive good value or that such conditions create good will? Would the situation exist if the buyer made or had made a few simple comparisons, and would the finisher permit this stretch if he expected to be called to account for the reduction in fabric service, or if minimum standards were established.

Another illustration: Four fabrics of wool, all made for the same particular use, but of slightly different weights. The important factor was tensile strength and length of service. The total tensile strengths for warp and filling cloth were 247.2 pounds; 243.4 pounds; 198.4 pounds and 258.4 pounds, respectively. The wearing qualities as shown by tests were 2,050, 3,900, 3,550, and 4,650 rubs, respectively. It was found that the fabric which had the greatest total tensile strength also had the greatest rubbing properties, but at the same time it was found that the second cloth which had about 11 pounds less total tensile strength, had about 44 per cent as much wearing qualities. The tensile strength relations did not correspond at all with the rubbing qualities.

The first two fabrics were made in the same plant for the same particular purpose. One weighed 16.58 ounces and the other weighed 18.32 ounces, but the fabric which weighed about 2 ounces more had nearly twice as great

rubbing capacity, even though it had about 4 pounds per inch less total tensile strength. The condition never could have occurred with careful investigation, as the materials were from the same large producer and the difference can be explained only by lack of knowledge.

TENSILE STRENGTH TESTS NOT GOOD WEARABILITY GUIDE

The first positive statement that can be made is that tensile strength tests are not a good guide as to the wearing qualities of fabrics and those who have purchased or depended upon this basis are simply deceiving themselves.

There is another important problem from a buyer's standpoint and one which ought to be more important from a producer's standpoint. This refers to regularity of product. Your society has established certain standards as to yarn size or weight tolerance. The details may be satisfactory for producers, but what about a buyer. Average tensile strength or average yarn size does not necessarily indicate length of service. The following illustration may be of value in this connection.

A buyer purchased a large lot of ordinary cotton cloth where service was the main factor in combination with color fastness. The warp cloth breaks at an average of 134.6 pounds and the filling cloth at an average of 32.4 pounds. Of course, it is a radically unbalanced and unsatisfactory fabric construction and never should be produced, but the important development is that at places the filling cloth pulls or breaks at the seams. Analysis showed that the filling yarn varied in size, using an average of 36 picks in each weighing from 18.61 to 23.74.

Where the heavier filling was found there was no trouble evident in garment production. However, the buyer could obtain no redress simply because an average of all the tests made showed that the yarn size and the cloth weight were within market standards. Does anyone believe that the buyer of such garments which contained even the heavier filling yarn would receive reasonable wearing value?

This makes possible a second positive statement, it being that variations in yarn size and characteristics have a very important effect upon service. The fact is overlooked that a fabric usually wears out or that a hole occurs on a single pick or end, and that it does not occur per inch or per yard, except as a result of the first break. The individual variations from normal are the important consideration and not the average results. There are a very large number of cotton and other types of cloth made in which yarn size variations of 100 per cent are common and statements that such variations are due to practical conditions are simply for protection. I can tell you men, that in my opinion, if some reasonable standards of requirements are not established as to the performance of certain finished standard or service cloths, there will be a great deal of trouble result. It simply is ridiculous for manufacturers or distributors to claim that this cannot be done.

Many of the characteristics of rayon materials are being or soon will be established. Thus, if a gray yarn has a certain tensile strength, the woven cloth should contain, within certain limits, a certain tensile strength, and the

(Continued on Page 22)



FAST

to rain or sun

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HERE is an interesting specialty product for which you should find good use.

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* Reg. U. S. Pat. Off.



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ORGANIC CHEMICALS DEPARTMENT

DYESTUFFS DIVISION, WILMINGTON, DELAWARE

TEXTILE BULLETIN

Member of

Audit Bureau of Circulations and Associated Business Papers, Inc.
Published Every Thursday By

CLARK PUBLISHING COMPANY

Offices: 118 West Fourth Street, Charlotte, N. C.

DAVID CLARK	Managing Editor
D. H. HILL, JR.	Associate Editor
JUNIOR M. SMITH	Business Manager

SUBSCRIPTION

One year, payable in advance	\$2.00
Other Countries in Postal Union	4.00
Single Copies	.10

Contributions on subjects pertaining to cotton, its manufacture and distribution, are requested. Contributed articles do not necessarily reflect the opinion of the publishers. Items pertaining to new mills, extensions, etc., are solicited.

A Show-Down Coming

THERE must, of necessity, be a show-down with the National Labor Relations Board, and in our opinion the time is not far distant.

In spite of the recent NRA decision of the United States Supreme Court and, in spite of many previous expressions by that same body, the National Labor Relations Board, is attempting to regulate labor relations within the several States.

They are attempting to arraign the Clinton Cotton Mills, Clinton, S. C., because the employees of the company formed a Clinton Friendship Association and decided that they would not permit members of the United Textile Workers to work in the same mill with them.

From Atlanta, Ga., comes the report that the National Labor Relations Board has arraigned the Gate City Cotton Mills upon the grounds that they have refused to "bargain collectively" with their employees. We have, in the past, sent several letters to the U. S. Department of Labor asking them to define and explain "collective bargaining," but they could offer no definition. We sent similar inquiries to the labor boards established under the NRA, but they could give no definition.

As the new Labor Relations Board has charged a mill with refusing to "bargain collectively," it may be that we will now hear that activity defined and explained.

Congress was organized as the servant or creature of the several States and has only such powers as were conferred upon it by the States. Congress does not own the States.

When the Constitution of the United States

was in the formative process the following was adopted as Section 1:

Section 1. All legislative powers herein granted shall be vested in a Congress of the United States, which shall consist of a Senate and House of Representatives.

Those who participated in the Constitutional Convention thought that this made it plain that Congress should have only those powers granted to it, but the people, even in those days, were unwilling to trust Congress, and refused to ratify the Constitution until ten clarifying amendments were adopted.

The most important of the amendments was:

Amendment—The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people.

The intent and purpose of this amendment was to make it very plain that Congress had only those powers delegated to it by the States and that all other powers and functions were reserved by the States and to the people of the States.

Realizing that some changes, in the Constitution, might, at some future time, be necessary, there was a provision that amendments might be made with the consent and approval of three-fourths of the States.

Congress has submitted to the people an amendment which will permit it to enact laws to "limit, regulate or prohibit the labor of persons under 18 years of age," but the States have refused to ratify that amendment and therefore Congress has no such power.

Prior to submitting the Child Labor Amendment, Congress attempted to assume the power and enacted two Federal child labor laws, but the United States Supreme Court declared both of them to be unconstitutional.

One of the Federal child labor laws attempted to secure its objective by prohibiting the shipment across State lines of goods made by persons under a certain age or working more than a specified number of hours, but the United States Supreme Court, while expressing sympathy towards the elimination of child labor, said that "*Congress can not do by indirection that which it has no power to do directly.*"

In that decision, as in all previous decisions upon the subject, the United States Supreme Court said that had Congress had no power and had never been given any power to regulate or control the employment of labor within a State.

Taking advantage of the enthusiasm during the early stages of the Roosevelt Administration and the establishment of the NRA, persons interested in stripping the States of their reserved powers sought to deliver unto Congress and its agencies, control of the internal affairs of the States and to illegally take from the several

States the right to regulate labor within their own bounds.

By a unanimous decision, even Justice Brandies voting with the others, the United States Supreme Court said that Congress had no such powers and that they could only be obtained by the consent and vote of thirty-six States.

In spite of what the United States Supreme Court said about the NRA and its attempts to regulate labor within the States, Congress immediately attempted to seize control of labor, and not only passed a number of illegal laws but set up a National Labor Relations Board and attempted to give it certain powers.

The King of Ethiopia has just as much right, as Congress, to regulate labor in South Carolina and his orders, if issued, are entitled to equal respect.

We are not adverse to friendly efforts to mediate and solve problems incident to disagreements between strikers and their employers or those workers who, although they do not strike, feel that they have complaints.

If, however, the National Labor Relations Board comes to any cotton mill claiming authority or claiming the right to issue orders and to enforce them, our advice to cotton mills is to refuse to appear at any of their hearings and to absolutely ignore all of their rulings.

If the National Labor Board claims any authority or that they are "the law," they are at the same time defying the law as laid down by the United States Supreme Court which has said that neither Congress nor any of its agencies or creatures has power to regulate the labor of persons within a State.

The National Labor Relations Board is an illegally created body and has no power outside the District of Columbia.

In a case recently heard at Spartanburg, S. C., Judge Mann held that the recently enacted South Carolina law prohibiting an employer from discharging an employee for union activities and making such an action a misdemeanor was unconstitutional.

Judge Mann, no doubt, based his decision upon an opinion rendered by the United States Supreme Court, about 1929, which said, in part:

The same liberty which enable men to form unions and through the unions to enter into agreement with employers willing to agree, entitles other men to remain independent of the union and other employers to agree with them to employ no man who owes allegiance or obligation to the union.

We do not favor refusing employment to persons solely upon the grounds that they are members of a labor union; in fact, we have often urged equal treatment for both union and non-

union employees, and we consider any other policy to be unfair.

However, the United States Supreme Court has said that an employer has the right to say that he will not employ any person who is a member of a union and that is the law.

The Clinton Cotton Mills can, if they wish, refuse to employ any person who carries a union card and the Gate City Cotton Mill may refuse to bargain collectively (whatever that is) with its employees.

The National Labor Relations Board sets itself up as a law enforcement board or court, in defiance of the United States Supreme Court, and, in that position, is not entitled to any respect whatever.

The 101 Days

As part of a "pointing with pride" campaign, members of the Administration on several recent occasions have informed the electorate that the emergency is passed, that America has "come through stormy seas into fair weather."

If these expressions of optimism be justified, why is it that expenditures of Government funds, greatly enlarged on the alleged grounds of combatting the emergency, are expanding and not contracting? Here is the record: total expenditures from June 30th through October 9th of this year were \$1,951,309,000, an increase of \$226,081,000 over the same period of 1934 and of \$900,106,000 over 1933. The deficit in the first 101 days of the current fiscal year has been \$862,078,000, an increase of 261 per cent from two years ago when, by general admission, the emergency had not passed.

There seems to be an inconsistency somewhere. Perhaps, in Mr. Morgenthau's absence, Mr. Farley can explain.—*Wall Street Journal*.

Spinners Need Nerve

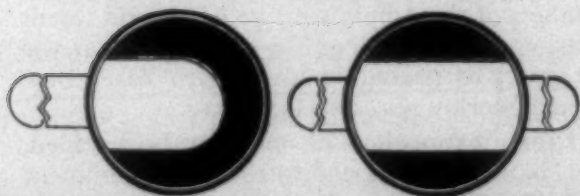
A prominent yarn spinner writes:

Statistics show no stocks and billings each week are more than production. Nerve is what the spinners need right now, the ball is in the air and if he "muffs" it, it will be too bad.

Eternal Vigilance

In questions of power, let no more be said of confidence in man, but bind him down from mischief by the chains of the Constitution—*Thomas Jefferson*.

ROUND SAFETY EDGES AND ENDS



Why shouldn't workmen prefer Stanley Bale Ties! The Round Safety Edges and Round Safety Ends, cut with the Stanley Round End Cutter, eliminate all possibility of dangerous cuts and scratches to hands and arms.

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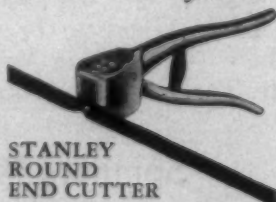
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Stanley Sealer gives Super-Pressure



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Mill News Items

HILDEBRAN, N. C.—A one-story addition, measuring 165 feet, has recently been completed by J. A. Cline & Son. This addition was to hose knitting and looping equipment.

FOREST CITY, N. C.—Florence Mills here have increased operation to two eight-hour shifts, 40 hours per week. For the past several months the mills have been operating only 30 hours a week.

BELMONT, N. C.—The Rutherford Hosiery Mills, Inc., have been incorporated here by C. T. Stowe and A. S. Ford. The company is to manufacture hosiery and other knit goods. Mr. Stowe is treasurer and general manager of the Belmont Hosiery Mills and Mr. Ford is production manager.

PULASKI, VA.—Upon the completion of a one-story addition to the Paul Knitting Mills here, measuring 40x60 feet, a finishing division of the mills will be established, according to an announcement. These mills are engaged in the manufacture of seamless hosiery, using about 400 circular knitting machines.

ROCK HILL, S. C.—At a hearing held at Lancaster Circuit Judge J. Henry Johnson ruled for the continued operation for twelve months of the Victoria Cotton Mill of Rock Hill under the present management. It was agreed at the hearing that the mill pay \$1,000 a month to the conservator-receivers of the Central Union Bank, holders of the mill's mortgage, and spend \$500 per month for improvement and upkeep at the mill. This will be effective for the first two months. For the remaining ten of the twelve months the mill will pay the conservator-receivers \$1,500 per month. The mill will also pay State, county and municipal taxes approximating \$9,000.

ROANOKE, VA.—The Viscose Corporation of Virginia will spend approximately \$100,000 for the construction of a caustic soda reclaiming plant and for enlarging of the company's processing department here. Announcement of the building program was made by H. C. Neren, manager of the Roanoke plant. The contract for the caustic soda plant, which it is estimated will cost about \$50,000, already has been let to B. F. Parrott & Co., contractors, and pouring of concrete for the basement is to be started this week.

The building will be 100x80 feet, one story in height, and will be constructed of brick, concrete and steel. The contract for the processing department has not been let as yet. Steel for the soda plant will be furnished by the Virginia Bridge & Iron Co. plant of Roanoke. Operation of the plant will begin as soon as possible.

A considerable saving in the manufacture of rayon will be made possible by the new plant, since virtually all soda used in the process, which heretofore has been going to waste after use, will be reclaimed and used again. The caustic soda is used in the manufacture of rayon to remove the impurities in wood and cotton pulp. Engineers estimate the company will save many millions of pounds of soda annually, by use of the plant. The proposed extension of the processing department will increase the capacity of that one department by about 30 per cent, but does not increase the production capacity of the Viscose plant.

Mill News Items

BRISTOL, VA.—The Bristol Textile Corporation, with maximum capital of 2,850 shares of no par value and \$15,000 preferred, has been chartered by the State Corporation Commission to engage in business of manufacturing and selling knit and woven goods. Hunter H. Galloway of Bristol is president.

HARRIMAN, TENN.—A one-story addition to the Harriman Hosiery Mill has been constructed in which new machinery will be installed, doubling the present output of the mills. Ladies' cotton, rayon and silk plaited hose are manufactured, using about 1,039 circular knitting machines.

DENTON, N. C.—About 40 knitting machines are now in operation at the Thornton Knitting Company. This newly-organized hosiery manufacturing concern was put into operation around October 1st. The new concern is housed in a portion of the Rogers Hosiery Mill Building. S. W. Burton of Thomasville, N. C., is secretary-treasurer of the new plant. Men's fancy hose are being manufactured.

Mills Get Government Orders

Washington.—Contracts were awarded by the procurement division of the Treasury Department for the purchase by the Government of approximately 2,182,945 yards of textiles under the relief program of the Works Progress Administration.

Deliveries are required to begin by November 25th. Proposed purchases by the Government under the contracts include 155,000 yards of chambray Type A; 100,000 yards of sateen; 325,000 yards of birdseye; 788,945 yards of 4.3 ounces outing flannel; 550,000 yards of terry toweling, and 420,000 yards of huck toweling.

Successful bidders were: Cone Export & Commission Co., 100,000 yards of chambray for delivery from Cliffside, N. C.; Leslie Evans & Co., 55,000 yards of chambray for delivery from Winston-Salem, N. C.

Batavia Mills, Inc., received the entire award for supplying sateen, 100,000 yards of black and 100,000 yards of white, in lots of 25,000 yards each, with shipments to be made from the following points: Black from Norwich, Conn., and Philadelphia, and white from Sterling, Conn., and Philadelphia.

Cannon Mills will supply 200,000 yards of birdseye cloth, with delivery from Kannapolis, N. C. The remaining 125,000 yards will be supplied by J. B. Stevens & Co. from Concord, N. C.

Brown Manufacturing Company received an award for 200,000 yards of outing flannel, f. o. b. Concord, N. C., and Cone Export & Commission Co. will supply 228,400 yards of the material from Anderson, S. C., and 360,545 from Forest City, N. C.

Supplies of terry toweling are to be made by Batavia Mills, Inc., in an amount of 300,000 yards from Mooresville, N. C.; Cannon Mills, 200,000 yards from Kannapolis, N. C., and Cone Export & Commission Co., 50,000 yards from Cliffside, N. C.

Cannon Mills also will supply 350,000 yards of huck toweling from Kannapolis, N. C., and Archibald E. Livingston & Co., 70,000 yards from Lowell, Mass.

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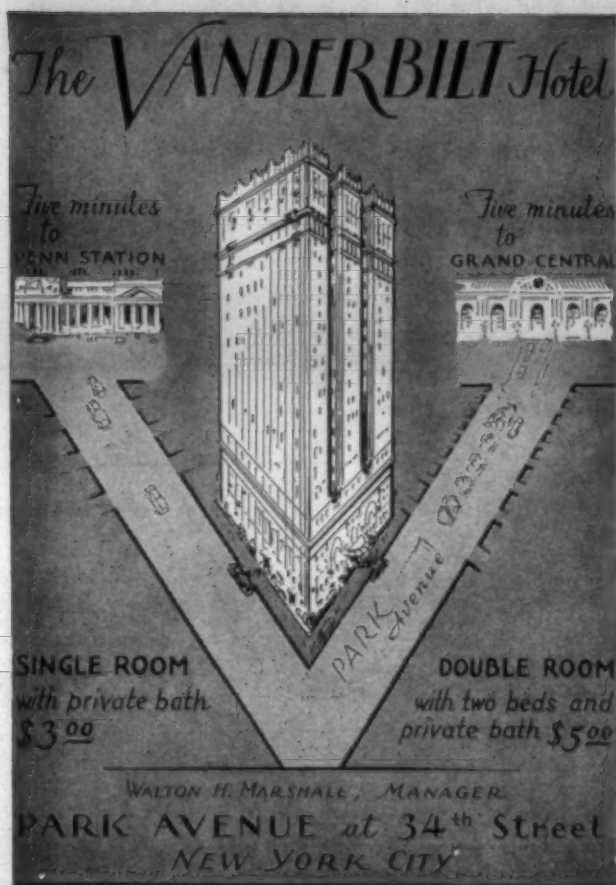
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Rayons Found Stronger Than Cotton On Weight Basis

(Continued from Page 16)

finished cloth should also bear a certain definite relation to the gray cloth. It now is being proven regularly that most standard synthetic cloths can be finished, dyed and printed without any important loss in tensile strength considering the changes in construction. These losses in strength are decidedly less than occur regularly in finishing standard cotton cloths.

When a buyer purchases a certain fabric construction of a certain type of yarn, he should expect a certain definite result, within reasonable limits, and what is more, he is going to get it soon on synthetics. Any cloth maker or finisher who does not deliver it is likely to get into serious difficulties. This means that some concerns will have to do a great deal better than they are doing at the present time.

To show the situation which exists, I am giving a few examples of tensile strength for gray and finished cloth. These are for goods from the same lot, with all the comparisons made under similar conditions. The cloths were selected at random and were supposed to be entirely satisfactory. The 92x44 is a crepe construction while the 92x60 was spoiled in finishing.

		Tensile Strength	
		Warp	Filling
		Pounds	
149x90	Gray	60.0	73.8
	Finished	58.9	56.9
147x92	Gray	60.8	85.9
	Finished	61.4	77.1
92x44	Gray	63.8	23.4
	Finished	74.2	23.8
112x52	Gray	66.5	35.6
	Finished	66.8	30.2
110x56	Gray	94.4	54.6
	Finished	91.4	48.0
92x60	Gray	30.8	22.2
	Finished	20.2	12.9
72x48	Gray	34.7	28.5
	Finished	33.7	22.5
140x68	Gray	56.1	35.0
	Finished	56.6	34.6

Another interesting matter is the effect of water on the tensile strength and elongation of synthetic cloths. While ordinary fabrics only are referred to, and while further comparisons should be made, it was found on investigation that the changes due to water occurred almost immediately. Thus, it appeared true that stabilization and total change in fabric characteristics occurred in one minute, since there was no practical difference in tensile strength, or elongation before breaking in one minute, in 10 minutes or in 30 minutes. Since making these comparisons I have made additional ones of the same type on the same cloths.

Swatches of dry cloth were taken in a temperature of 75 degrees Fahrenheit and 40 per cent relative humidity and placed in the breaking machine. A soaking sponge was used to wet the swatch as quickly as possible when it was fastened in the machine and at the same time the machine was started. This was as rapidly as it was possible to accomplish the wetting out and the break. It was found from the few tests made that the tensile strength was reduced as much as through any of the longer immersions.

A rather peculiar result in this comparison was that the percentage of elongation before break appeared to be

slightly greater regularly than with a longer wetting out. This does not seem logical, but may have been due to a certain elongation when wet, which was not noticeable when the swatches were wet before insertion in the machine.

The fact that such rapid absorption of moisture occurs is extremely important in all handling and particularly in testing. Any material which has such characteristics will vary decidedly depending upon the conditions under which the comparisons are made. It explains why many of the difficulties have occurred in handling. A much shorter than usual period of conditioning should be sufficient for accurate results.

Thus, the ordinary viscose synthetic yarn fabric under normal conditions of use, considered on a weight for weight basis, has greater average tensile strength by about 40 per cent than ordinary cotton cloth. It also has greater tensile strength than linen cloth on the same basis by about 30 per cent. This is absolutely contrary to the ideas of most users and many others. Even when soaked for a period of 30 minutes, in which time tensile strength is lost, while on cotton cloth it is increased somewhat, the amount of usable strength is much more than sufficient to prevent any trouble. Based upon definite relations I have established for viscose cloths this means from 22 to 25 pounds per inch on a strip test basis when soaked, whereas any cloth in a normal atmosphere is considered unsatisfactory when it has 15 pounds tensile strength on a strip basis.

Another and most important matter in connection with wear is that this tensile strength is regular in character because the variations in synthetic yarns are unimportant as compared with those in any other type of cloth. Some lightweight viscose cloths in garment form have been used at my home for the past three years. They have been through the mill literally, as they have been boiled regularly, rubbed along with similar cotton garments and treated exactly the same and they have outworn the cotton articles. That is not because they are stronger when wet, although they are much stronger when dry than cotton, but rather because the tensile strength and wearing qualities are much more evenly distributed and there are no weak places, which are the points where fabric failure occurs. The thin or fine yarns in most cloths are the weak links in the chain.

In addition I can state to you here that I have tested certain viscose cloths which are at least 50 per cent stronger than similar cotton fabrics when dry, and also definitely stronger when wet out for 30 minutes.

A matter which has been overlooked generally is that many of the so-called defects in synthetic yarn cloths are not due to real faults, but rather are based upon the general perfection of the fabric as made. The fact is that well-made synthetic yarn materials are so regular today in all characteristics, that the smallest variation from normal is accentuated by contrast, where in a fabric composed of any other type of yarn the small irregularity would be invisible. The extreme regularity in synthetic yarn fabrics is likely to become one of their most important features, as it will permit definite and general standardization. From the facts shown in this discussion you will realize why I feel that perfect fabrics can be developed only through careful investigation, together with the correlation of the results.

Textile Tests and How To Make Them

(Continued from Page 10)

against the doffing. Your doffers tear down a good many of them, so in getting ends down per thousand spindle hours I would advocate that it is wise to leave out those

ends that come down immediately on starting. Personally, I leave out all the ends that the doffer causes to come down when I am making my test.

Mr. Parks, Sr.: The chairman of the meeting asked us to let our electrician, who is a technical man, come over and tell you about making power tests on spinning. He is here now, and if it is convenient you might let him do that now.

POWER TESTS IN SPINNING

Delman Jerry, Electrician, Erwin Cotton Mills Co., West Durham: Loose operating parts, carelessness on the part of employees, etc., all come into the picture. It is a little hard to find these things by ordinary methods, but it so happens that most of them creep into the load carried by the electric motor, so a recording watt meter is very useful. By estimating the motor's efficiency, I can tell approximately, or very closely, how much load the motor is carrying. By taking these tests and analyzing them from time to time, we are able to determine whether there has been any change from the previous test.

The most interesting test made recently was on spinning frames. We had three different types of spindles. We found one ran 20 per cent cheaper than the others. Things like that are worth knowing.

We also have a recording volt meter. We have not gone very far with that, as we have just recently bought it.

OVERLOADED MOTORS

We recently made some tests in another spinning room. We had one 200 H.P. motor there which we found was pulling a load much over that. The motor will not last very long at that. It was probably brought about by small changes made during the year. A second motor was 250 H.P. and was pulling a load of 252 H.P. That has very little to do with the efficiency of the motor; it was operating efficiently, but a motor will not last long when it is overloaded. In another case we found a 20 H.P. motor operating at 10 H.P. That is only 85 per cent of its efficiency. Such conditions as that we continually find throughout the plant; it looks right now as if there is no end to it.

Mr. Lanier: Have you made any tests on bad loom fixing, etc., and things like that, to find what they are costing?

Mr. Jerry: I did make a test at one mill and found three motors carrying 21 per cent overload and another one carrying 25 per cent overload. I am inclined to think most of that overload has been added in the last year, and I am inclined to think it is in the shafting alignment, loom adjustment, and tight bolts—those three things.

Mr. Cates: In making your spinning room tests, how do you go about it? Suppose you find a motor is overloaded, where do you go to remedy that overload?

Mr. Jerry: In this particular case, where we made this test, the frames had been speeded up since the motor was installed. In that particular case I don't think it was friction but in changes that had been made. The spindles also had been changed, and they were using larger bobbins than in the original installation. I think the thing to do there is to add some motors.

Where we have individual drive, we measure the average power consumed over two individual frames just as near alike as possible. If we find some difference there, we begin to look for friction.

Mr. Parks, Sr.: Maybe you could go into a little more

detail in telling us how you make your test on the spinning frame and how long.

TESTS ON SPINNING FRAME

Mr. Jerry: The first thing we do is to disconnect the rail and doff the frame, and run nothing but the cylinder and the spindles, and measure the power consumed under those conditions. Then we put the bobbins on and measure that; then start regular operation. To do that, we let a man put the bobbins on and put all the ends up with the frame standing. Then we measure the power consumed with the frame in regular operation.

We take it at the end of every hour, if it is a warp frame, for seven and one-half hours, then average those results. On the filling frames we run the test a shorter time—two and one-half hours, I believe, or two hours and fifteen minutes. We do that the same way. We also make a note of the temperature and humidity. There is no definite relationship between the two, but we have

found it varies. There seems to be some relationship between humidity and friction, but we can not tell what it is; we just note it there for purposes of information.

Mr. Lanier: Does the loom fixer or the section man have something to do with some of this overload?

Mr. Jerry: I think he does, probably. I think he probably had something to do with the overload on those 250 H.P. motors I spoke of a while ago. Overhauling was done about a year ago, and I don't think anybody was feeling any too well then, and I believe some bad work was done.

OIL CAN WASTE POWER

Mr. Cates: I have made an exhaustive test on H.P. and found the greatest friction load I had was oil. We changed from 100 viscosity to 75 and made a test, and then changed from 75 per cent to 60 per cent and made a test. We found there was the greatest difference in the drag—in the load. So I was wondering whether the gentleman had made any tests to see whether the viscosity of the spindle oil has any effect on power consumed.

Mr. Jerry: I have not made any tests on that, but some had been made shortly before I came. You are right; it has. Winders, particularly. I notice that with some winders we have quite a bit of trouble on Monday morning sometimes, and it is due entirely to stiff oil.

Discussion On Weaving

Mr. Lanier: If there are no further questions, let's move on to the weaving. I am going to ask Mr. Miley, of the Erwin Cotton Mills, to lead the discussion on this. We have only a few minutes left, so I hope you will fall right into line.

Mr. Miley: There are any number of tests that can be and should be made in weaving. As our time is about up, I will just tell you briefly how and why.

TEST ON LOOM STOPPAGE

We make one test that we think is very important, and that is a test on loom stoppage. It is very important to determine what causes these looms to stop. We pick out a man who we think is competent to make the test and who is interested in finding out what makes them stop, and we put him right with the weaver. He stays right with him, and every time a loom stops he, with the help of the weaver, tries to determine what caused that loom to stop. We have a regular form that we use in making the test, on which we list the loom numbers down the side and the cause of the stops up across the top. Of course, we record the style of goods, and so on, and the speed of the loom. In our list of causes we have, first, unknown causes; then slip knots, winder knots, creeler knots, warper knots, beamer knots, twisted ends, spinning gouts, uneven yarn, loose ends, extra ends, waste thread, kinked yarn, cut selvage, hard size, and so on, to breakdowns, warps off, looms stopped for cleaning.

In making the test, as I said, we put this man making it with the weaver, and he stays right with the weaver. To get a check on him as nearly as we can, the superintendent goes in there once in a while, and the assistant overseer goes in, and the overseer. We keep that man on those looms for a week, to try to determine as accurately as possible what caused each loom stop. If he can not determine it, he puts it down under "unknown." In compiling the information from these tests we can find out what is causing the loom stops.

Some time ago we had poor work in the weave room. We asked various weavers and loom fixers what caused it and got various answers. Then we made a test and found the largest number of stops were due to kinky yarn. We could go back, then, and correct that, and it has improved our work in the weave room.

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Mr. Harden: I think one thing in doing that is to keep the speeds on each loom and each style of goods separate.

Mr. Miley: We do that.

Mr. Parks, Jr.: You can include as many looms in your test as you want to, but your man can not keep up with more looms than one weaver has. I don't think you can handle more than 32 looms. You have to camp on the weaver's trail. A loom stops, and you go over there and find a binder is too slack on it. After a while another loom stops, and you find a great big gout, and you decide that it is something that has gotten on it in the beaming, so you put it in that column. I always put the marks down and tally them in fives, so they are easy to count up. Then at the end of the week you can total them.

Mr. Harden: Probably some of these weavers do not have looms running on all denim. You should put the style on there, and you can put your looms on one style together on the chart, whether they come together on the floor or not. I recommend that in making loom stoppage tests you select some style that you always have on. We have one style that we always pick on (although we make tests of others); we have that all the time and can compare it with tests made ten years ago.

If an end comes down and makes a bad place in the cloth, the weaver will motion for the man who is making the test to come over, and we will try to analyze it, try to analyze the things that make seconds. I presume some of you have some seconds. Sometimes the things that make the seconds are not the things that are hurting you the worst in your production. Ends down per loom per hour give you your production but don't always cause seconds. I think ends down per loom per hour, together with a test for the discovery of what causes imperfections in cloth, is important.

Mr. Mullen: You have not spoken much except about warp. On that loom stoppage, some stoppage is from filling causes, isn't it?

Mr. Parks, Jr.: Mr. Mullen, we didn't put them up here, but we have them. There is a place on that chart for your breakage from softness or from singling or from doubling, or whether it just sloughs on the bobbin.

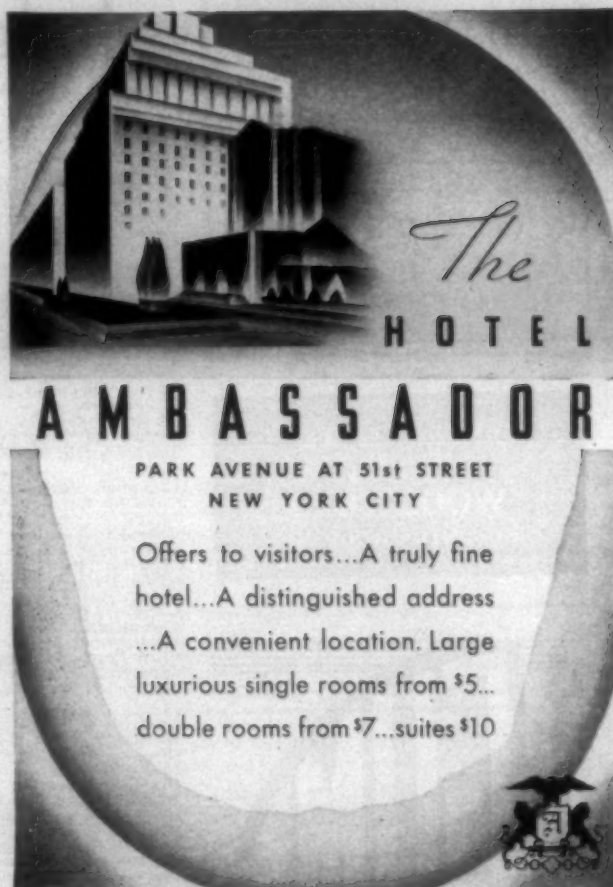
Our time is nearly up. Anybody that wants to see these forms that we have here and wants to see these machines operate, stay in the room after the conclusion of the meeting.

A. W. Faris, Overseer Spinning, No. 4 Mill, Erwin Cotton Mills Company, Durham: I think it was agreed at the beginning that tests should be made by some capable, disinterested, honest person. I want to ask this question: In the spinning room is the spinner or the section man disinterested? In the weave room, is the weaver a disinterested party? I contend that they are not, and I want to see a show of hands on it.

Mr. Long: That question has come up several times. I agree with Mr. Mullen that we should have a man especially for it. If there is a man in the room who can take three or four hours a day to do it, then he is not doing full-time work the rest of the time. I agree with Mr. Mullen that you should have an especially trained man.

Mr. Lanier: I shall be glad to ask them that, if you want a show of hands, but I think every superintendent ought to have something to do with the running of his mill, and I think every overseer ought to have something to do with the running of his room, and I think they ought to be honest enough with themselves to make the tests and record the results accurately.

This concluded the discussion.



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New City Mills Busy

Newton, N. C.—According to officials of the company, the New City Mill Company has achieved a new record, both from the standpoint of number of operatives employed and the amount of weekly payrolls. The local mill, during the month, had more employees on its payroll than at any time in its history. Each week since that time has noted a steady

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Annual Cotton Handbook

The 1935 edition of the Annual Cotton Handbook, published by Comtelburo, Ltd., of London and of 66-70 Beaver street, has just appeared, offering the trade its usual convenient and compact volume of data on the world's cotton markets. This is the sixty-fifth year of publication of the handbook which has long been recognized as one of the most authoritative compilations of cotton statistical data. As in years past, it is again the first on the market of annual reports of its description.

The handbook this year includes all of its previous features made up from daily cable records of American, East Indian, Egyptian, Sudan and other cotton crops, together with Liverpool, Manchester, Continental, Brazilian and other statistics. A new feature added this season is a table giving highest and lowest prices of Egyptian uppers futures, rendering more complete the records of Egyptian cotton which in previous years have included only high and low prices of Sakrellaridis. In addition to the statistics of the American and Liverpool exchanges those of Barcelona, Bremen, Hamburg, Ghent, Havre, Genoa, Venice and Rotterdam are included.

The handbook is made up with the careful editing of W. J. Mercer and W. J. Woolley from the cable records of an organization which serves the cotton trade daily over a great part of the cotton world.

Japanese Cotton Consumption

During the 1934-1935 cotton crop year Japan imported 3,303,000 bales, 500-pound weight, as against the record import figure of 3,609,000 bales during the 1933-34 crop year, the Department of Agriculture reports. Despite this decline, raw cotton consumption in 1934-35 was the largest on record, amounting to 3,444,000 bales, against 3,052,000 bales in the previous year. In 1934-35 imports of American cotton declined by 359,000 bales, while imports from India increased 110,000 bales in comparison with preceding year.

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Cotton Goods Markets

New York.—Cotton goods were moderately active last week. Buyers have been disposed to adopt a waiting attitude for the present and are not covering so actively. In gray goods, narrow sheetings continued to sell well. Print cloths were less active, but prices held very steady.

The demand for heavy gray goods showed improvement and mills are well sold for several weeks ahead. The better business in colored goods continued during the week. Denims and chambrays continued to lead the sales.

The extent to which replenishment business comes into the market will depend very largely on the price performance over the next week or two. Most traders feel confident that no general decline will develop during the quiet period, although it is to be expected that there will be occasional instances of individual mills selling a lot now and then under the market.

Additional business was reported on specialty print cloths, which were sold in good quantities on contracts which ran through the end of the year. During the past two weeks prices on a number of the industrial specialties have been advanced and the higher prices have been paid freely.

Narrow print cloths were quiet, with only minor quantities moving, and these sales were at unchanged prices. Attempts to cut under first hand quotations were unsuccessful.

Carded broadcloth showed no change, with the bulk of inquiry continuing to center around spots of the 100x60s, which were said to be sought at $9\frac{1}{8}$ c, against a quotation of 9c for quick deliveries and $8\frac{7}{8}$ c for the later shipment positions. On 112x60s there was some business during the day at 10c for early shipments.

The fine goods division was quiet. Such business as did go through, however, was at unchanged prices. The combed lawns appeared to have settled at the lower levels which were established in the trading earlier in the week. Buyers were operating cautiously on these styles, but found no evidence of additional weakness.

Print cloths, 27-in., 64x60s	5
Print cloths, 28-in., 64x60s	$5\frac{1}{8}$
Gray goods, $38\frac{1}{2}$ -in., 64x60s	$6\frac{1}{4}$
Gray goods, 39-in., 80x80s	$8\frac{3}{4}$
Gray goods, 39-in., 68x72s	$7\frac{1}{2}$
Brown sheetings, 3-yard	$9\frac{1}{4}$
Brown sheetings, standard	$9\frac{3}{4}$
Tickings, 8-ounce	19
Denims	15
Brown sheetings, 4-yard, 56x60s	$7\frac{3}{4}$
Dress gingham	$17\frac{1}{4}$
Staple gingham	10

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Cotton Yarn Markets

Philadelphia, Pa.—A fair amount of business was done in yarns last week, but the total was smaller than the average for the past several weeks. Some good orders, with deliveries to run through the end of the year and further, were reported. Prices held firm but were generally unchanged.

Beyond the end of the year few spinners are willing to go. They refuse to do so because they don't want to commit themselves that far ahead, looking for even better margins than they now enjoy. Their margins have been improving since the drop in cotton at the time the Government's new cotton loan policy was announced. During the last month carded weaving yarn spinners have increased prices of 20s two-ply a full cent, during which time raw cotton was advancing only a shade more, 1/2c.

Although October new business was a shade smaller, the industry has felt the benefits of increased specifications on running contracts. Manufacturers are taking deliveries faster than specified which is placing most sales spinners in a rush position and this shows no indications of diminishing; the reverse rather. Yet reports from the South are that comparatively few spinning plants that have been closed for long periods are being reopened.

The situation shows some unevenness in that carded knitting yarn producers have not benefited as much as weaving and combed spinners. This is reflected in current prices which are out of line so far as the usual relationship between carded knitting and weaving is concerned.

Late deliveries continue in effect, many mills having sold beyond their delivery capacity. In other instances buyers asking for delivery anticipations have been unable to arrange for accommodations on account of full production against orders being handled at maximum capacity.

It is noted that colored yarn for knitters, mainly 12s singles in commercial colors, is not being specified as to color in a scheduled way. It has not come to the point of mills being subject to cancellations on these occasionally overbought descriptions.

Combed yarn quotations have been marked up sharply to the extent that buyers are allowing earlier contracts to carry current requirements.

Southern Single Skeins			30s	27 1/2-28	36	-36 1/2
8s	27 1/2-28		40s	27 1/2-28	42	-
10s	27 1/2-28		40s ex.	28-28 1/2	41	-42
12s	28-28 1/2		50s	28 1/2-29	48	-
14s	28 1/2-29		Duck Yarns, 3, 4 and 5-Ply			
16s	29-29 1/2		8s	27 1/2-28	27 1/2	-28
20s	30 1/2-31		10s	28-28 1/2	28	-28 1/2
26s	33-33 1/2		12s	28 1/2-29	28 1/2	-29
30s	34 1/2-35		16s	30-30 1/2	30	-
36s	38 1/2-39		20s	31-31 1/2	31	-31 1/2
40s	41		Carpet Yarns			
Southern Single Warps			Tinged carpets, 8s, 3			
10s	27 1/2-28		and 4-ply			24 -25 1/2
12s	28-28 1/2		Colored strips, 8s, 3			
14s	28 1/2-29		and 4-ply			26 -
16s	29-29 1/2		White carpets, 8s, 3			
20s	30 1/2-31		and 4-ply			28 -
26s	33-33 1/2		Part Waste Insulating Yarns			
30s	34 1/2-35		8s, 2-ply			23 1/2-24
40s	41		8s, 2, 3 and 4-ply			24 1/2-25
Southern Two-Ply Chain Warps			10s, 2, 3 and 4-ply			25 1/2-26
8s	27 1/2-28		12s, 2-ply			26-26 1/2
10s	28-28 1/2		16s, 2-ply			28-28 1/2
12s	28 1/2-29		20s, 2-ply			29 1/2-30
16s	30-30 1/2		30s, 2-ply			35 1/2-
20s	31-31 1/2		Southern Frame Cones			
24s	33-33 1/2		8s			26 1/2-27
26s	34-34 1/2		10s			27 1/2-28
30s	36-36 1/2		12s			28-28 1/2
36s	39 1/2-40		14s			28 1/2-29
40s	42		16s			29-29 1/2
Southern Two-Ply Skeins			18s			29 1/2-30
8s	27 1/2-28		20s			30-30 1/2
10s	28-28 1/2		22s			31-31 1/2
12s	28 1/2-29		24s			32-32 1/2
14s	29-29 1/2		26s			33-33 1/2
16s	30-30 1/2		28s			34-34 1/2
20s	31-31 1/2		30s			34 1/2-35
24s	33-33 1/2		40s			41 -
26s	34-34 1/2					
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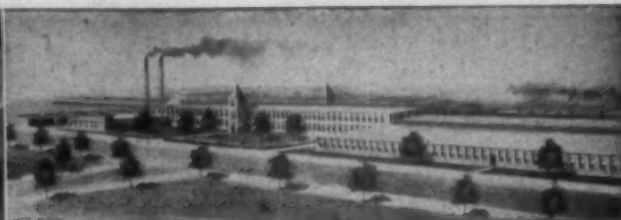
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The operatives here believe in home mission work, and have an organization to relieve any among them who are



Superintendents and Overseers, Cherokee Spinning Co., Knoxville, Tenn.

Front Row, Left to Right—Geo. D. Simpkins, Superintendent Cotton Mill; R. C. Higgins, Overseer Night Carding; W. G. Froemander, Overseer Night Weaving; Y. Veynar, Superintendent Weaving; Geo. W. Williams, Overseer Day Carding.

Back Row—Fred Money, Overseer Cloth Room; W. L. Bowen, Master Mechanic; Arlie Langston, Overseer Night Spinning.

sick or in distress. Dues are paid into a fund for this purpose, and a nice sum is always in the treasury for emergencies. This is one of the nicest, liveliest organizations of the kind that the writer knows about. These good people have discovered fundamental principles of true happiness—friendly feeling and sincere concern, expressed in deeds of unselfish service to those around them who are in trouble.

I learned something while here that filled my heart with thanksgiving. One of my books, "Hearts of Gold," loaned by Superintendent and Mrs. Geo. D. Simpkins to

someone who passed it on, was said to have been the direct cause of 42 conversions and additions to a little country church. Am happy to know that my work has accomplished good.

SUPERINTENDENTS, OVERSEERS AND OTHER KEY MEN

Geo. D. Simpkins is superintendent of carding and spinning; he was formerly at Shelby and Asheville is well known in the Carolinas. Y. Veynar is superintendent of dye house, weaving and cloth rooms; G. W. Williams is overseer carding; R. C. Higgins, carder on second shift; A. E. Whaley, overseer spinning; A. Langston, spinner on second shift; Frank Keough and W. G. Froemander, overseers weaving; Claude T. Atkinson, overseer warping, slashing and drawing-in.

M. J. Henegar, overseer winding and twisting; F. L. Money, overseer the cloth room. (This is one mill that always has Money—and this man's wife always has Money—which is more than most wives can say!)

W. L. Bowen, master mechanic, and his assistant, Carl L. Horner, are among our good friends. Wonder how long a mill would run without a master mechanic? They are about the most important men around a plant.

Others in card room who read our paper are Edward Holland, W. M. Nichols, J. E. Holland, J. T. Williams and H. W. Williams, fixers.

In spinning room, J. W. Rice, C. R. Dunivant, Alvin Jones, Ed. Lowery, J. E. Debusk, Harley Underwood and Fred Bacon, section men.

In weave room, John Keough, Jr., and C. E. Yeary, assistant weavers; J. B. Romines, M. C. Campbell and J. S. Hawkins, weavers; R. H. Cluck and J. C. Henson, tying-in; all fine men.

Now meet a real up-to-date bunch of loom fixers: Jesse Brown, Herman Large, L. R. French, R. E. Gibson, W. T. Eidson, E. D. Baldwin, A. J. McKinney, W. M. Ballard and Gilbert Knott—men who are interested in their jobs and in keeping posted on textiles.

Altogether, it is hard to find a more progressive and up-to-date group of operatives and the writer has never spent a more pleasant visit than that to Cherokee Spinning Company.

NASHVILLE, TENN.

WERTHAN BAG MILL RUNNING FULL TIME

Just across the street from Werthan Bag Mill, the Government is spending two million dollars in Better Homes for 350 families. The Government will own the property until rents have repaid the sum invested—then

the property will belong to the City of Nashville. At least, that was the way it was told to the writer.

Had heard that the Werthan Bag Mill was closed down, but found that the report, like many others, was without foundation. The office here is such an interesting one that visitors for audience, never find the time dragging. Pretty girls flitting here and there, flashing smiles right and left; telephones ringing incessantly; the rustle of papers on various desks; the file clerk's busy hands sorting bills, etc.; visitors lounging in the waiting room. Big business.

Most every key man takes the Textile Bulletin. C. F. Turner, day superintendent, and B. R. Dickson, night superintendent; D. K. Dunn, overseer day carding, and J. C. Holt, night carder (Mr. Holt has a brother, Ernest Holt, overseer carding and spinning, Santee Mills, Bamberg, S. C.); S. T. Kerr and D. C. Lewis, overseers of spinning, No. 1 and No. 2; J. O. King, overseer day weaving, and Will Delk, night weaver.

INGRAM MFG. CO.

This is another lovely place to visit. Dan Johnson, Irish superintendent, affectionately called "Dan" by most of his people, has the good will of everyone. A. M. Gordy, overseer carding, was out, but his wife renewed his subscription, and no doubt could run his room for him. Mrs. Edna Reed is overseer of spinning, and has been for four years, filling that position with satisfaction to all concerned. This charming and efficient young woman was formerly Miss Edna Patterson, daughter of Mr. and Mrs. M. F. Patterson of Samoset Cotton Mills, Talladega, Ala., where she formerly worked. After coming to Ingram Mills she was for a time time-keeper and was then promoted to the position of overseer. Superintendent Johnson says there has never been a better overseer of spinning, and she knows all the details from bottom to top. Here is actual proof that a woman can become an able textile department head, and we are immensely proud of Mrs. Reed.

J. L. Walling is overseer of winding, assisted by Jack Shelton; both mighty fine and pleasant gentlemen. Mrs. Anna Lou Fuller is time-keeper and Miss Blanche Wright, office manager.

The product of this mill is varied: Merino and twisted yarns, beautiful rugs and bath room ensembles leading.

ROCK HILL, S. C.

INDUSTRIAL COTTON MILLS GOING NICELY AND PRODUCING QUALITY PRODUCTS

Was sorry to find our good friend, D. E. Mahaffey, overseer carding, on the sick list. He had an attack of acute indigestion, but was on the mend. Few overseers are held in such high esteem by their help as is Mr. Mahaffey. They speak of him with sincere affection and emphatically declare that he is "one of the finest men in the world."

But he is not the only high type overseer in this plant. Those in the other departments are fine, upright gentlemen and worthy of the good will and hearty co-operation given them by their employees.

C. A. Smith is second hand in carding on first and S. T. Enloe, second hand on second shift; B. D. Graham, second hand on pickers; C. C. Trull, H. C. McCammon and Bud Hunter, card grinders—and they know their cards.

T. F. Starnes is the genial overseer spinning; his de-

partment was in nice order; T. W. West is second hand on first shift and Mynard Love, on second.

V. J. Deas is the live-wire overseer of weaving, beaming and slashing and is well liked for his fair and square dealings. J. A. Covington is second hand in weaving, and Mr. Deas says there are none better. He loves his work, is loyal and trustworthy in every respect. (There are three of these Covington brothers—all gogetters and working up.)

D. R. Marthers, second hand in beaming and slashing, is another young man above the average; he has a splendid influence and fine executive ability; when I reached his department I found more than a dozen fine fellows ready to sign on the dotted line as follows: D. E. Marthers, B. F. Sturgess, L. A. Weaver, L. A. Steele, R. A. Jordan, J. C. Taylor, F. L. Craig, C. D. Covington, J. J. Hinson, A. M. Wright, Coley Gurley, J. R. Miller and Ernest Marthers.

B. R. Spaugh is night overseer weaving; W. E. Hartsell, overseer the cloth room; R. P. Ross, cloth checker; G. P. Paxton, overseer dyeing; S. K. Lineberger, master mechanic; F. F. Tice, power plant engineer; A. C. Sturgess, power plant.

Others who read our journal are Foy Arnett, in card room; Clyde Crowder, Hugh McGuirt, J. D. Moody, Alfred Thatcher and Cecil Barnes, young men in the spinning and winding rooms who are looking forward to the future and hoping to go higher.

Loom fixers? They are a fine group and the following take our paper: G. B. Covington, head loom fixer (he is not so large, but he is on the job all right and "knows his onions"); S. A. Bigham, A. R. Jennings, C. J. Rikard (his mother was my neighbor years ago in Norwood, N. C.), T. C. Connor and C. E. Chandler—all monkey wrench artists.

Others in the weave room who are among our big family of friends and readers are H. W. Mahaffey, E. F. Bratton, F. R. Rooks, L. W. Raybon, and two charming young ladies who are interested in textiles—Misses Gertrude Neely and Rosa Carpenter.

In tying-in room, J. B. Garrison, A. W. Garrison and S. T. Robinson are live wires.

Industrial Mill office is one place where the atmosphere does not freeze a person. Good humor prevails. Mr. Jackson, office manager, Superintendent J. A. Wooten and Mr. Pitts, the president and treasurer, are happy if they can get a joke on me. Some of these days I'll get it back on them.

Industrial Cotton Mills are running right along, for which operatives are profoundly grateful. Winter is just around the corner, and where mills have been forced to close down, the future is everything but bright and cheerful for those left in idleness.

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Recent Developments in Textile Finishing

(Continued from Page 8)

(b) The preparation of highly sulphonated oils. These products possess increased stability, are less affected by hard water, by contact with heavy Epsom-salt finishes, and so on.

(c) The preparation of sulphonated alcohols and long chain compounds which possess detergent properties. An important property in the case of some detergents concerns their behaviour towards lime salts, and frequently they produce a softening effect on fibres in addition to detergent and wetting out properties.

Out of the large number of chemical compounds and preparations available only about one hundred substances are of commercial utility, and only a very limited number have really valuable properties so far as finishing is concerned. It often happens a finisher is able to discover valuable properties in assistants quite different from, and additional to, the intended property.

Commercially valuable substances may be classified according to their effect on finishing processes, thus:—

- (a) To simplify;
- (b) To improve;
- (c) To produce new or novel effects (very few).

Grouped according to the effect they produce finishing assistants fall into classes such as:

- (1) Detergents
- (2) Wetting-out agents
- (3) Solvents

- (4) Emulsifying agents
- (5) Softening agents
- (6) Crepeing agents

Some compounds such as pine oil prove excellent wetting-out and emulsifying agents, and in America considerable use is made of this assistant.

INTERESTING RECENT DEVELOPMENTS

The development of the preparation of synthetic resins is interesting. At first they were insoluble in water. Then examples were produced which were soluble in organic solvents and lastly water soluble synthetic resins became available. This interesting group of compounds have found surprisingly little use in finishing through the employment of one of these in the production of Tootal's Anti-Crease fabrics is a notable exception. Finality has not been reached in the manufacture of creaseless or anti-crease fabrics. Present methods confer an increased elasticity to a fibre and yarn with a consequent greater power of recovery from creasing. Natural non-creasing fabrics do not appear to crease at all, and it is more than possible development will proceed rather in the direction of augmenting the latter power rather than increasing the former. Recent work on the subject goes to show that the orientation of micelles in the inner core and outer covering of a textile fibre play some part in resistance to creasing.

Another interesting development is the discovery of substances which may be said to possess affinity for fibres similar to dyestuffs, such as:

(a) Waterproof finishes have been obtained by the esterification of fibres by the agency of the chlorides of the higher fatty alcohols. The waterproofing effect is accompanied by a marked softness of handle and the proofing withstands normal dry cleaning treatment.

(b) The immunization of cotton by acetylation or benzoylation is a similar example.

(c) Softening agents which have a definite effect on the fibre. "Fixanol" has a remarkable softening effect on cotton fibre and fixes direct cotton colours in addition. It is useful in printing especially for improving the fastness of the colours of washing prints and permanently softening the material at the same time.

New stripping agents are capable of decolouring turkey red, vat, and fast azoic dyeings. Lissolamine used in the presence of hydrosulphite is an example and the underlying chemical reaction is not yet fully understood.

With regard to waterproofing, a difficult problem has been solved by the discovery of a wax emulsion which is stable in the presence of aluminum acetate. To promote the crepeing of rayon crepe cloths, assistants such as soap and phenol have been replaced by a sulphonated fatty alcohol and pine oil. The crepeing effect is increased and softer handling fabric results. Synthetic resins have proved useful as adhesives and as anti-slip assistants in plain rayon fabrics. Similarly they are finding employment as roughening agents to facilitate staple fibre spinning, and increasing the tensile strength of staple fibre yarns. In the case of acetate rayon, solvent emulsions employed in conjunction with heat render the fibre plastic and permit pattern glaze effects.

PROBLEMS YET TO BE SOLVED

Having considered achievement, it may be profitable to touch one or two outstanding problems which have yet to be solved. The delustering of rayon can hardly be considered accomplished commercially in that there is no really satisfactory dulling agent available. The application of rubber as a finishing assistant as distinct from its use as a coating agent is not yet fully successful commercially. It is more than possible these two problems will be adequately solved in the near future.



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